



<110> Benner, Steven Albert

<120> Evolution-Based Functional Genomics

<130> file reference 10-765120

<140> 10/765,120

<141> 2004-01-28

<160> 38

<170> MacIntosh OS 10.3 Microsoft Word v. 2003

<210> 1

<211> 486

<212> PRT

<213> Tilapia nilotica

<400> 1

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				20					25					30	
Leu	Thr	Gly	Phe	Leu	Leu	Leu	Val	Trp	Asn	Tyr	Lys	Asn	Thr	Ser	
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Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Phe	Leu	Gly	Ile	Gly	Pro	Leu	Ile	
				50					55					60	
Ser	Tyr	Leu	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn	
				65					70					75	
Tyr	Tyr	Asn	Lys	Thr	Tyr	Gly	Glu	Phe	Ile	Arg	Val	Trp	Ile	Gly	
				80					85					90	
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Val	Phe	His	
				95					100					105	
Val	Met	Lys	His	Ser	His	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	Pro	
				110					115					120	
Gly	Leu	Gln	Phe	Ile	Gly	Met	His	Glu	Lys	Gly	Ile	Ile	Phe	Asn	
				125					130					135	
Asn	Asn	Pro	Val	Leu	Trp	Lys	Ala	Val	Arg	Thr	Tyr	Phe	Met	Lys	
				140					145					150	
Ala	Leu	Ser	Gly	Pro	Gly	Leu	Val	Arg	Met	Val	Thr	Val	Cys	Ala	
				155					160					165	
Asp	Ser	Ile	Thr	Lys	His	Leu	Asp	Lys	Leu	Glu	Glu	Val	Arg	Asn	
				170					175					180	
Asp	Leu	Gly	Tyr	Val	Asp	Val	Leu	Thr	Leu	Met	Arg	Arg	Ile	Met	
				185					190					195	
Leu	Asp	Thr	Ser	Asn	Asn	Leu	Phe	Leu	Gly	Ile	Pro	Leu	Asp	Glu	
				200					205					210	
Lys	Ala	Ile	Val	Cys	Lys	Ile	Gln	Gly	Tyr	Phe	Asp	Ala	Trp	Gln	

	215		220		225
Ala Leu Leu Leu	Lys Pro Asp Ile Phe	Phe Lys Ile Pro Trp	Leu		
	230		235		240
Tyr Arg Lys Tyr	Glu Lys Ser Val Lys	Asp Leu Lys Glu Asp	Met		
	245		250		255
Glu Ile Leu Ile	Glu Lys Lys Arg Arg	Arg Ile Phe Thr Ala	Glu		
	260		265		270
Lys Leu Glu Asp	Cys Met Asp Phe Ala	Thr Glu Leu Ile Leu	Ala		
	275		280		285
Glu Lys Arg Gly	Glu Leu Thr Lys Glu	Asn Val Asn Gln Cys	Ile		
	290		295		300
Leu Glu Met Leu	Ile Ala Ala Pro Asp	Thr Met Ser Val Thr	Val		
	305		310		315
Phe Phe Met Leu	Phe Leu Ile Ala Lys	His Pro Gln Val Glu	Glu		
	320		325		330
Glu Leu Met Lys	Glu Ile Gln Thr Val	Val Gly Glu Arg Asp	Ile		
	335		340		345
Arg Asn Asp Asp	Met Gln Lys Leu Glu	Val Val Glu Asn Phe	Ile		
	350		355		360
Tyr Glu Ser Met	Arg Tyr Gln Pro Val	Val Asp Leu Val Met	Arg		
	365		370		375
Lys Ala Leu Glu	Asp Asp Val Ile Asp	Gly Tyr Pro Val Lys	Lys		
	380		385		390
Gly Thr Asn Ile	Ile Leu Asn Ile Gly	Arg Met His Arg Leu	Glu		
	395		400		405
Phe Phe Pro Lys	Pro Asn Glu Phe Thr	Leu Glu Asn Phe Ala	Lys		
	410		415		420
Asn Val Pro Tyr	Arg Tyr Phe Gln Pro	Phe Gly Phe Gly Pro	Arg		
	425		430		435
Ala Cys Ala Gly	Lys Tyr Ile Ala Met	Val Met Met Lys Val	Thr		
	440		445		450
Leu Val Ile Leu	Leu Arg Arg Phe Gln	Val Gln Thr Pro Gln	Asp		
	455		460		465
Arg Cys Val Glu	Lys Met Gln Lys Lys	Asn Asp Leu Ser Leu	His		
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Pro Asp Glu Thr	Ser Gly				
	485				

<210> 2

<211> 486

<212> PRT

<213> Oryzias latipes

<400> 2

Met Phe Leu Glu	Met Leu Asn Pro Met	Gln Tyr Asn Val Thr	Ile		
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	20		25		30

Ile	Met	Gly	Leu	Leu	Leu	Leu	Ile	Trp	Asn	Cys	Glu	Ser	Ser	Ser	
				35					40						45
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Cys	Leu	Gly	Ile	Gly	Pro	Leu	Ile	
				50					55						60
Ser	His	Gly	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn	
				65					70						75
Tyr	Tyr	Asn	Lys	Met	Tyr	Gly	Glu	Phe	Met	Arg	Val	Trp	Ile	Ser	
				80					85						90
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Met	Phe	His	
				95					100						105
Val	Met	Lys	His	Ser	His	Tyr	Ile	Ser	Arg	Phe	Gly	Ser	Lys	Arg	
				110					115						120
Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Asn	Gly	Ile	Ile	Phe	Asn	
				125					130						135
Asn	Asn	Pro	Ser	Leu	Trp	Arg	Thr	Ile	Arg	Pro	Phe	Phe	Met	Lys	
				140					145						150
Ala	Leu	Thr	Gly	Pro	Gly	Leu	Val	Arg	Met	Val	Glu	Val	Cys	Val	
				155					160						165
Glu	Ser	Ile	Lys	Gln	His	Leu	Asp	Arg	Leu	Gly	Glu	Val	Thr	Asp	
				170					175						180
Thr	Ser	Gly	Tyr	Val	Asp	Val	Leu	Thr	Leu	Met	Arg	His	Ile	Met	
				185					190						195
Leu	Asp	Thr	Ser	Asn	Met	Leu	Phe	Leu	Gly	Ile	Pro	Leu	Asp	Glu	
				200					205						210
Ser	Ala	Ile	Val	Lys	Lys	Ile	Gln	Gly	Tyr	Phe	Asn	Ala	Trp	Gln	
				215					220						225
Ala	Leu	Leu	Ile	Lys	Pro	Asn	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu	
				230					235						240
Tyr	Arg	Lys	Tyr	Glu	Arg	Ser	Val	Lys	Asp	Leu	Lys	Asp	Glu	Ile	
				245					250						255
Ala	Val	Leu	Val	Glu	Lys	Lys	Arg	His	Lys	Val	Ser	Thr	Ala	Glu	
				260					265						270
Lys	Leu	Glu	Asp	Cys	Met	Asp	Phe	Ala	Thr	Asp	Leu	Ile	Phe	Ala	
				275					280						285
Glu	Arg	Arg	Gly	Asp	Leu	Thr	Lys	Glu	Asn	Val	Asn	Gln	Cys	Ile	
				290					295						300
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Thr	Leu	
				305					310						315
Tyr	Phe	Met	Leu	Leu	Leu	Val	Ala	Glu	Tyr	Pro	Glu	Val	Glu	Ala	
				320					325						330
Ala	Ile	Leu	Lys	Glu	Ile	His	Thr	Val	Val	Gly	Asp	Arg	Asp	Ile	
				335					340						345
Lys	Ile	Glu	Asp	Ile	Gln	Asn	Leu	Lys	Val	Val	Glu	Asn	Phe	Ile	
				350					355						360
Asn	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg	
				365					370						375
Arg	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	
				380					385						390

Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Arg	Leu	Glu	
				395					400					405	
Tyr	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Glu	Lys	
				410					415					420	
Asn	Val	Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	
				425					430					435	
Gly	Cys	Ala	Gly	Lys	Tyr	Ile	Ala	Met	Val	Met	Met	Lys	Val	Val	
				440					445					450	
Leu	Val	Thr	Leu	Leu	Arg	Arg	Phe	Gln	Val	Lys	Thr	Leu	Gln	Lys	
				455					460					465	
Arg	Cys	Ile	Glu	Asn	Ile	Pro	Lys	Lys	Asn	Asp	Leu	Ser	Leu	His	
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Pro	Asn	Glu	Asp	Arg	His										
				485											

<210> 3

<211> 486

<212> PRT

<213> Danio rerio

<400> 3

Met	Ile	Leu	Glu	Met	Leu	Asn	Pro	Met	His	Tyr	Asn	Leu	Thr	Ser	
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Met	Val	Pro	Glu	Val	Met	Pro	Val	Ala	Thr	Leu	Pro	Ile	Leu	Leu	
				20					25					30	
Leu	Thr	Gly	Phe	Leu	Phe	Phe	Val	Trp	Asn	His	Glu	Glu	Thr	Ser	
				35					40					45	
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Cys	Met	Gly	Ile	Gly	Pro	Leu	Ile	
				50					55					60	
Ser	His	Leu	Arg	Phe	Leu	Trp	Met	Gly	Leu	Gly	Ser	Ala	Cys	Asn	
				65					70					75	
Tyr	Tyr	Asn	Lys	Met	Tyr	Gly	Glu	Phe	Val	Arg	Val	Trp	Ile	Ser	
				80					85					90	
Gly	Glu	Glu	Thr	Leu	Val	Ile	Ser	Lys	Ser	Ser	Ser	Thr	Phe	His	
				95					100					105	
Ile	Met	Lys	His	Asp	His	Tyr	Ser	Ser	Arg	Phe	Gly	Ser	Thr	Phe	
				110					115					120	
Gly	Leu	Gln	Tyr	Met	Gly	Met	His	Glu	Asn	Gly	Val	Ile	Phe	Asn	
				125					130					135	
Asn	Asn	Pro	Ala	Val	Trp	Lys	Ala	Leu	Arg	Pro	Phe	Phe	Val	Lys	
				140					145					150	
Ala	Leu	Ser	Gly	Pro	Ser	Leu	Ala	Arg	Met	Val	Thr	Val	Cys	Val	
				155					160					165	
Glu	Ser	Val	Asn	Asn	His	Leu	Asp	Arg	Leu	Asp	Glu	Val	Thr	Asn	
				170					175					180	
Ala	Leu	Gly	His	Val	Asn	Val	Leu	Thr	Leu	Met	Arg	Arg	Thr	Met	
				185					190					195	
Leu	Asp	Ala	Ser	Asn	Thr	Leu	Phe	Leu	Arg	Ile	Pro	Leu	Asp	Glu	

	200		205		210
Lys Asn Ile Val	Leu Lys Ile Gln Gly	Tyr Phe Asp Ala Trp	Gln		
	215		220		225
Ala Leu Leu Ile	Lys Pro Asn Ile Phe	Phe Lys Ile Ser Trp	Leu		
	230		235		240
Ser Arg Lys His	Gln Lys Ser Ile Lys	Glu Leu Arg Asp Ala	Val		
	245		250		255
Gly Ile Leu Ala	Glu Glu Lys Arg His	Arg Ile Phe Thr Ala	Glu		
	260		265		270
Lys Leu Glu Asp	His Val Asp Phe Ala	Thr Asp Leu Ile Leu	Ala		
	275		280		285
Glu Lys Arg Gly	Glu Leu Thr Lys Glu	Asn Val Asn Gln Cys	Ile		
	290		295		300
Leu Glu Met Met	Ile Ala Ala Pro Asp	Thr Leu Ser Val Thr	Val		
	305		310		315
Phe Phe Met Leu	Cys Leu Ile Ala Gln	His Pro Lys Val Glu	Glu		
	320		325		330
Ala Leu Met Lys	Glu Ile Gln Thr Val	Leu Gly Glu Arg Asp	Leu		
	335		340		345
Lys Asn Asp Asp	Met Gln Lys Leu Lys	Val Met Glu Asn Phe	Ile		
	350		355		360
Asn Glu Ser Met	Arg Tyr Gln Pro Val	Val Asp Ile Val Met	Arg		
	365		370		375
Lys Ala Leu Glu	Asp Asp Val Ile Asp	Gly Tyr Pro Val Lys	Lys		
	380		385		390
Gly Thr Asn Ile	Ile Leu Asn Ile Gly	Arg Met His Lys Leu	Glu		
	395		400		405
Phe Phe Pro Lys	Pro Asn Glu Phe Thr	Leu Glu Asn Phe Glu	Lys		
	410		415		420
Asn Val Pro Tyr	Arg Tyr Phe Gln Pro	Phe Gly Phe Gly Pro	Arg		
	425		430		435
Ser Cys Ala Gly	Lys Phe Ile Ala Met	Val Met Met Lys Val	Met		
	440		445		450
Leu Val Ser Leu	Leu Arg Arg Phe His	Val Lys Thr Leu Gln	Gly		
	455		460		465
Asn Cys Leu Glu	Asn Met Gln Lys Thr	Asn Asp Leu Ala Leu	His		
	470		475		480
Pro Asp Glu Ser	Arg Ser				
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<210> 4

<211> 487

<212> PRT

<213> Carassius auratus

<400> 4

Val Leu Glu Leu Leu Met Gln Gly Ala His Asn Ser Ser Tyr Gly		
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				20					25						30
Leu	Leu	Cys	Leu	Leu	Leu	Ala	Ile	Arg	His	His	Trp	Thr	Glu	Lys	
				35					40						45
Asp	His	Val	Pro	Gly	Pro	Cys	Phe	Leu	Leu	Gly	Leu	Gly	Pro	Leu	
				50					55						60
Leu	Ser	Tyr	Cys	Arg	Leu	Ile	Trp	Ser	Gly	Ile	Gly	Thr	Ala	Ser	
				65					70						75
Asn	Tyr	Tyr	Asn	Ser	Lys	Tyr	Gly	Asp	Ile	Val	Arg	Val	Trp	Ile	
				80					85						90
Asn	Gly	Glu	Glu	Thr	Leu	Ile	Leu	Ser	Arg	Ser	Ser	Ala	Val	Tyr	
				95					100						105
His	Val	Leu	Arg	Lys	Ser	Leu	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	
				110					115						120
Leu	Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Gln	Gly	Ile	Ile	Phe	
				125					130						135
Asn	Ser	Asn	Val	Ala	Leu	Trp	Lys	Lys	Val	Arg	Thr	Phe	Tyr	Ala	
				140					145						150
Lys	Ala	Leu	Thr	Gly	Pro	Gly	Leu	Gln	Arg	Thr	Leu	Glu	Ile	Cys	
				155					160						165
Ile	Thr	Ser	Thr	Asn	Thr	His	Leu	Asp	Asn	Leu	Ser	His	Leu	Met	
				170					175						180
Asp	Ala	Arg	Gly	Gln	Val	Asp	Ile	Leu	Asn	Leu	Leu	Arg	Cys	Ile	
				185					190						195
Val	Val	Asp	Ile	Ser	Asn	Arg	Leu	Phe	Leu	Gly	Val	Pro	Leu	Asn	
				200					205						210
Glu	His	Asp	Leu	Leu	Gln	Lys	Ile	His	Lys	Tyr	Phe	Asp	Thr	Trp	
				215					220						225
Gln	Thr	Val	Leu	Ile	Lys	Pro	Asp	Val	Tyr	Phe	Arg	Leu	Ala	Trp	
				230					235						240
Trp	Leu	His	Gly	Lys	His	Lys	Arg	Asp	Ala	Gln	Glu	Leu	Gln	Asp	
				245					250						255
Ala	Ile	Ala	Ala	Leu	Ile	Glu	Gln	Lys	Arg	Val	Gln	Leu	Thr	Arg	
				260					265						270
Ala	Glu	Lys	Phe	Asp	Gln	Leu	Asp	Phe	Thr	Gly	Glu	Leu	Ile	Phe	
				275					280						285
Ala	Gln	Ser	His	Gly	Glu	Leu	Ser	Thr	Glu	Asn	Val	Arg	Gln	Cys	
				290					295						300
Val	Leu	Glu	Met	Ile	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Ile	Ser	
				305					310						315
Leu	Phe	Phe	Met	Leu	Leu	Leu	Leu	Lys	Gln	Asn	Pro	Asp	Val	Glu	
				320					325						330
Leu	Lys	Ile	Leu	Gln	Glu	Met	Asn	Ala	Val	Leu	Ala	Gly	Arg	Ser	
				335					340						345
Leu	Gln	His	Ser	His	Leu	Ser	Gly	Leu	His	Ile	Leu	Glu	Ser	Phe	
				350					355						360
Ile	Asn	Glu	Ser	Leu	Arg	Phe	His	Pro	Val	Val	Asp	Phe	Thr	Met	
				365					370						375

Arg	Arg	Ala	Leu	Asp	Asp	Asp	Val	Ile	Glu	Gly	Tyr	Glu	Val	Lys
				380										390
Lys	Gly	Thr	Asn	Ile	Ile	Leu	Asn	Val	Gly	Arg	Met	His	Arg	Ser
				395										405
Glu	Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Ser	Leu	Asp	Asn	Phe	Gln
				410										420
Lys	Asn	Val	Pro	Ser	Arg	Phe	Phe	Gln	Pro	Phe	Gly	Ser	Gly	Pro
				425										435
Arg	Ser	Cys	Val	Gly	Lys	His	Ile	Ala	Met	Val	Met	Met	Lys	Ser
				440										450
Ile	Leu	Val	Thr	Leu	Leu	Ser	Arg	Phe	Ser	Val	Cys	Pro	Val	Lys
				455										465
Gly	Cys	Thr	Val	Asp	Ser	Ile	Pro	Gln	Thr	Asn	Asp	Leu	Ser	Gln
				470										480
Gln	Pro	Val	Glu	Glu	Pro	Ser								
				485										

<210> 5

<211> 484

<212> PRT

<213> Ictalurus punctatus

<400> 5

Met	Glu	Glu	Val	Leu	Lys	Gly	Thr	Val	Asn	Phe	Ala	Ala	Thr	Val
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Gln	Val	Thr	Leu	Met	Ala	Leu	Thr	Gly	Thr	Leu	Leu	Leu	Ile	Leu
				20										30
Leu	His	Arg	Ile	Phe	Thr	Ala	Lys	Asn	Trp	Arg	Asn	Gln	Ser	Gly
				35										45
Val	Pro	Gly	Pro	Gly	Trp	Leu	Leu	Gly	Leu	Gly	Pro	Ile	Met	Ser
				50										60
Tyr	Ser	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn	Tyr
				65										75
Tyr	Asn	Glu	Lys	Tyr	Gly	Ser	Ile	Ala	Arg	Val	Trp	Ile	Ser	Gly
				80										90
Glu	Glu	Thr	Phe	Ile	Leu	Ser	Lys	Ser	Ser	Ala	Val	Tyr	His	Val
				95										105
Leu	Lys	Ser	Asn	Asn	Tyr	Thr	Gly	Arg	Phe	Ala	Ser	Lys	Lys	Gly
				110										120
Leu	Gln	Cys	Ile	Gly	Met	Phe	Glu	Gln	Gly	Ile	Ile	Phe	Asn	Ser
				125										135
Asn	Met	Ala	Leu	Trp	Lys	Lys	Val	Arg	Thr	Tyr	Phe	Thr	Lys	Ala
				140										150
Leu	Thr	Gly	Pro	Gly	Leu	Gln	Lys	Ser	Val	Asp	Val	Cys	Val	Ser
				155										165
Ala	Thr	Asn	Lys	Gln	Leu	Asn	Val	Leu	Gln	Glu	Phe	Thr	Asp	His
				170										180
Ser	Gly	His	Val	Asp	Val	Leu	Asn	Leu	Leu	Arg	Cys	Ile	Val	Val

<110> Benner, Steven Albert

<120> Evolution-Based Functional Genomics

<140> 10/765,120

<141> 2004-01-28

<160> 38

<170> MacIntosh OS 10.3 Microsoft Word v. 2003

<210> 1

<211> 486

<212> PRT

<213> Tilapia nilotica

<400> 1

Met	Val	Leu	Glu	Met	Leu	Asn	Pro	Met	His	Tyr	Lys	Val	Thr	Ser
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Met	Val	Ser	Glu	Val	Val	Pro	Phe	Ala	Ser	Ile	Ala	Val	Leu	Leu
				020					025					030
Leu	Thr	Gly	Phe	Leu	Leu	Leu	Val	Trp	Asn	Tyr	Lys	Asn	Thr	Ser
				035					040					045
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Phe	Leu	Gly	Ile	Gly	Pro	Leu	Ile
				050					055					060
Ser	Tyr	Leu	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn
				065					070					075
Tyr	Tyr	Asn	Lys	Thr	Tyr	Gly	Glu	Phe	Ile	Arg	Val	Trp	Ile	Gly
				080					085					090
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Val	Phe	His
				095					100					105
Val	Met	Lys	His	Ser	His	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	Pro
				110					115					120
Gly	Leu	Gln	Phe	Ile	Gly	Met	His	Glu	Lys	Gly	Ile	Ile	Phe	Asn
				125					130					135
Asn	Asn	Pro	Val	Leu	Trp	Lys	Ala	Val	Arg	Thr	Tyr	Phe	Met	Lys
				140					145					150
Ala	Leu	Ser	Gly	Pro	Gly	Leu	Val	Arg	Met	Val	Thr	Val	Cys	Ala
				155					160					165
Asp	Ser	Ile	Thr	Lys	His	Leu	Asp	Lys	Leu	Glu	Glu	Val	Arg	Asn
				170					175					180
Asp	Leu	Gly	Tyr	Val	Asp	Val	Leu	Thr	Leu	Met	Arg	Arg	Ile	Met
				185					190					195
Leu	Asp	Thr	Ser	Asn	Asn	Leu	Phe	Leu	Gly	Ile	Pro	Leu	Asp	Glu
				200					205					210
Lys	Ala	Ile	Val	Cys	Lys	Ile	Gln	Gly	Tyr	Phe	Asp	Ala	Trp	Gln
				215					220					225
Ala	Leu	Leu	Leu	Lys	Pro	Asp	Ile	Phe	Phe	Lys	Ile	Pro	Trp	Leu
				230					235					240

Tyr	Arg	Lys	Tyr	Glu	Lys	Ser	Val	Lys	Asp	Leu	Lys	Glu	Asp	Met	245	250	255
Glu	Ile	Leu	Ile	Glu	Lys	Lys	Arg	Arg	Arg	Ile	Phe	Thr	Ala	Glu	260	265	270
Lys	Leu	Glu	Asp	Cys	Met	Asp	Phe	Ala	Thr	Glu	Leu	Ile	Leu	Ala	275	280	285
Glu	Lys	Arg	Gly	Glu	Leu	Thr	Lys	Glu	Asn	Val	Asn	Gln	Cys	Ile	290	295	300
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Thr	Val	305	310	315
Phe	Phe	Met	Leu	Phe	Leu	Ile	Ala	Lys	His	Pro	Gln	Val	Glu	Glu	320	325	330
Glu	Leu	Met	Lys	Glu	Ile	Gln	Thr	Val	Val	Gly	Glu	Arg	Asp	Ile	335	340	345
Arg	Asn	Asp	Asp	Met	Gln	Lys	Leu	Glu	Val	Val	Glu	Asn	Phe	Ile	350	355	360
Tyr	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg	365	370	375
Lys	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	380	385	390
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Arg	Leu	Glu	395	400	405
Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Ala	Lys	410	415	420
Asn	Val	Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	425	430	435
Ala	Cys	Ala	Gly	Lys	Tyr	Ile	Ala	Met	Val	Met	Met	Lys	Val	Thr	440	445	450
Leu	Val	Ile	Leu	Leu	Arg	Arg	Phe	Gln	Val	Gln	Thr	Pro	Gln	Asp	455	460	465
Arg	Cys	Val	Glu	Lys	Met	Gln	Lys	Lys	Asn	Asp	Leu	Ser	Leu	His	470	475	480
Pro	Asp	Glu	Thr	Ser	Gly										485		

<210> 2

<211> 486

<212> PRT

<213> *Oryzias latipes*

<400> 2

Met	Phe	Leu	Glu	Met	Leu	Asn	Pro	Met	Gln	Tyr	Asn	Val	Thr	Ile	005	010	015
Met	Val	Pro	Glu	Thr	Val	Thr	Val	Ser	Ala	Met	Pro	Leu	Leu	Leu	020	025	030
Ile	Met	Gly	Leu	Leu	Leu	Leu	Ile	Trp	Asn	Cys	Glu	Ser	Ser	Ser	035	040	045
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Cys	Leu	Gly	Ile	Gly	Pro	Leu	Ile			

				050					055					060
Ser	His	Gly	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn
				065					070					075
Tyr	Tyr	Asn	Lys	Met	Tyr	Gly	Glu	Phe	Met	Arg	Val	Trp	Ile	Ser
				080					085					090
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Met	Phe	His
				095					100					105
Val	Met	Lys	His	Ser	His	Tyr	Ile	Ser	Arg	Phe	Gly	Ser	Lys	Arg
				110					115					120
Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Asn	Gly	Ile	Ile	Phe	Asn
				125					130					135
Asn	Asn	Pro	Ser	Leu	Trp	Arg	Thr	Ile	Arg	Pro	Phe	Phe	Met	Lys
				140					145					150
Ala	Leu	Thr	Gly	Pro	Gly	Leu	Val	Arg	Met	Val	Glu	Val	Cys	Val
				155					160					165
Glu	Ser	Ile	Lys	Gln	His	Leu	Asp	Arg	Leu	Gly	Glu	Val	Thr	Asp
				170					175					180
Thr	Ser	Gly	Tyr	Val	Asp	Val	Leu	Thr	Leu	Met	Arg	His	Ile	Met
				185					190					195
Leu	Asp	Thr	Ser	Asn	Met	Leu	Phe	Leu	Gly	Ile	Pro	Leu	Asp	Glu
				200					205					210
Ser	Ala	Ile	Val	Lys	Lys	Ile	Gln	Gly	Tyr	Phe	Asn	Ala	Trp	Gln
				215					220					225
Ala	Leu	Leu	Ile	Lys	Pro	Asn	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu
				230					235					240
Tyr	Arg	Lys	Tyr	Glu	Arg	Ser	Val	Lys	Asp	Leu	Lys	Asp	Glu	Ile
				245					250					255
Ala	Val	Leu	Val	Glu	Lys	Lys	Arg	His	Lys	Val	Ser	Thr	Ala	Glu
				260					265					270
Lys	Leu	Glu	Asp	Cys	Met	Asp	Phe	Ala	Thr	Asp	Leu	Ile	Phe	Ala
				275					280					285
Glu	Arg	Arg	Gly	Asp	Leu	Thr	Lys	Glu	Asn	Val	Asn	Gln	Cys	Ile
				290					295					300
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Thr	Leu
				305					310					315
Tyr	Phe	Met	Leu	Leu	Leu	Val	Ala	Glu	Tyr	Pro	Glu	Val	Glu	Ala
				320					325					330
Ala	Ile	Leu	Lys	Glu	Ile	His	Thr	Val	Val	Gly	Asp	Arg	Asp	Ile
				335					340					345
Lys	Ile	Glu	Asp	Ile	Gln	Asn	Leu	Lys	Val	Val	Glu	Asn	Phe	Ile
				350					355					360
Asn	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg
				365					370					375
Arg	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys
				380					385					390
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Arg	Leu	Glu
				395					400					405
Tyr	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Glu	Lys

Asn Val Pro Tyr	410	Asn Val Pro Tyr Phe Gln Pro	415	Phe Gly Phe Gly Pro	420
	425		430		435
Gly Cys Ala Gly	440	Lys Tyr Ile Ala Met	445	Val Met Met Lys Val	450
Leu Val Thr Leu	455	Leu Arg Arg Phe Gln	460	Val Lys Thr Leu Gln	465
Arg Cys Ile Glu	470	Asn Ile Pro Lys Lys	475	Asn Asp Leu Ser Leu	480
Pro Asn Glu Asp	485	Arg His			

<210> 3

<211> 486

<212> PRT

<213> Danio rerio

<400> 3

Met Ile Leu Glu	Met Leu Asn Pro Met	His Tyr Asn Leu Thr	Ser
	005	010	015
Met Val Pro Glu	Val Met Pro Val Ala	Thr Leu Pro Ile Leu	Leu
	020	025	030
Leu Thr Gly Phe	Leu Phe Phe Val Trp	Asn His Glu Glu Thr	Ser
	035	040	045
Ser Ile Pro Gly	Pro Gly Tyr Cys Met	Gly Ile Gly Pro Leu	Ile
	050	055	060
Ser His Leu Arg	Phe Leu Trp Met Gly	Leu Gly Ser Ala Cys	Asn
	065	070	075
Tyr Tyr Asn Lys	Met Tyr Gly Glu Phe	Val Arg Val Trp Ile	Ser
	080	085	090
Gly Glu Glu Thr	Leu Val Ile Ser Lys	Ser Ser Ser Thr Phe	His
	095	100	105
Ile Met Lys His	Asp His Tyr Ser Ser	Arg Phe Gly Ser Thr	Phe
	110	115	120
Gly Leu Gln Tyr	Met Gly Met His Glu	Asn Gly Val Ile Phe	Asn
	125	130	135
Asn Asn Pro Ala	Val Trp Lys Ala Leu	Arg Pro Phe Phe Val	Lys
	140	145	150
Ala Leu Ser Gly	Pro Ser Leu Ala Arg	Met Val Thr Val Cys	Val
	155	160	165
Glu Ser Val Asn	Asn His Leu Asp Arg	Leu Asp Glu Val Thr	Asn
	170	175	180
Ala Leu Gly His	Val Asn Val Leu Thr	Leu Met Arg Arg Thr	Met
	185	190	195
Leu Asp Ala Ser	Asn Thr Leu Phe Leu	Arg Ile Pro Leu Asp	Glu
	200	205	210
Lys Asn Ile Val	Leu Lys Ile Gln Gly	Tyr Phe Asp Ala Trp	Gln
	215	220	225

Ala	Leu	Leu	Ile	Lys	Pro	Asn	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu	
				230					235					240	
Ser	Arg	Lys	His	Gln	Lys	Ser	Ile	Lys	Glu	Leu	Arg	Asp	Ala	Val	
				245					250					255	
Gly	Ile	Leu	Ala	Glu	Glu	Lys	Arg	His	Arg	Ile	Phe	Thr	Ala	Glu	
				260					265					270	
Lys	Leu	Glu	Asp	His	Val	Asp	Phe	Ala	Thr	Asp	Leu	Ile	Leu	Ala	
				275					280					285	
Glu	Lys	Arg	Gly	Glu	Leu	Thr	Lys	Glu	Asn	Val	Asn	Gln	Cys	Ile	
				290					295					300	
Leu	Glu	Met	Met	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Val	Thr	Val	
				305					310					315	
Phe	Phe	Met	Leu	Cys	Leu	Ile	Ala	Gln	His	Pro	Lys	Val	Glu	Glu	
				320					325					330	
Ala	Leu	Met	Lys	Glu	Ile	Gln	Thr	Val	Leu	Gly	Glu	Arg	Asp	Leu	
				335					340					345	
Lys	Asn	Asp	Asp	Met	Gln	Lys	Leu	Lys	Val	Met	Glu	Asn	Phe	Ile	
				350					355					360	
Asn	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Ile	Val	Met	Arg	
				365					370					375	
Lys	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	
				380					385					390	
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Lys	Leu	Glu	
				395					400					405	
Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Glu	Lys	
				410					415					420	
Asn	Val	Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	
				425					430					435	
Ser	Cys	Ala	Gly	Lys	Phe	Ile	Ala	Met	Val	Met	Met	Lys	Val	Met	
				440					445					450	
Leu	Val	Ser	Leu	Leu	Arg	Arg	Phe	His	Val	Lys	Thr	Leu	Gln	Gly	
				455					460					465	
Asn	Cys	Leu	Glu	Asn	Met	Gln	Lys	Thr	Asn	Asp	Leu	Ala	Leu	His	
				470					475					480	
Pro	Asp	Glu	Ser	Arg	Ser										
				485											

<210> 4

<211> 487

<212> PRT

<213> Carassius auratus

<400> 4

Val	Leu	Glu	Leu	Leu	Met	Gln	Gly	Ala	His	Asn	Ser	Ser	Tyr	Gly	
				005					010					015	
Ala	Gln	Asp	Asn	Val	Cys	Gly	Ala	Met	Ala	Thr	Leu	Leu	Leu	Leu	
				020					025					030	
Leu	Leu	Cys	Leu	Leu	Leu	Ala	Ile	Arg	His	His	Trp	Thr	Glu	Lys	

				035					040					045
Asp	His	Val	Pro	Gly	Pro	Cys	Phe	Leu	Leu	Gly	Leu	Gly	Pro	Leu
				050					055					060
Leu	Ser	Tyr	Cys	Arg	Leu	Ile	Trp	Ser	Gly	Ile	Gly	Thr	Ala	Ser
				065					070					075
Asn	Tyr	Tyr	Asn	Ser	Lys	Tyr	Gly	Asp	Ile	Val	Arg	Val	Trp	Ile
				080					085					090
Asn	Gly	Glu	Glu	Thr	Leu	Ile	Leu	Ser	Arg	Ser	Ser	Ala	Val	Tyr
				095					100					105
His	Val	Leu	Arg	Lys	Ser	Leu	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys
				110					115					120
Leu	Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Gln	Gly	Ile	Ile	Phe
				125					130					135
Asn	Ser	Asn	Val	Ala	Leu	Trp	Lys	Lys	Val	Arg	Thr	Phe	Tyr	Ala
				140					145					150
Lys	Ala	Leu	Thr	Gly	Pro	Gly	Leu	Gln	Arg	Thr	Leu	Glu	Ile	Cys
				155					160					165
Ile	Thr	Ser	Thr	Asn	Thr	His	Leu	Asp	Asn	Leu	Ser	His	Leu	Met
				170					175					180
Asp	Ala	Arg	Gly	Gln	Val	Asp	Ile	Leu	Asn	Leu	Leu	Arg	Cys	Ile
				185					190					195
Val	Val	Asp	Ile	Ser	Asn	Arg	Leu	Phe	Leu	Gly	Val	Pro	Leu	Asn
				200					205					210
Glu	His	Asp	Leu	Leu	Gln	Lys	Ile	His	Lys	Tyr	Phe	Asp	Thr	Trp
				215					220					225
Gln	Thr	Val	Leu	Ile	Lys	Pro	Asp	Val	Tyr	Phe	Arg	Leu	Ala	Trp
				230					235					240
Trp	Leu	His	Gly	Lys	His	Lys	Arg	Asp	Ala	Gln	Glu	Leu	Gln	Asp
				245					250					255
Ala	Ile	Ala	Ala	Leu	Ile	Glu	Gln	Lys	Arg	Val	Gln	Leu	Thr	Arg
				260					265					270
Ala	Glu	Lys	Phe	Asp	Gln	Leu	Asp	Phe	Thr	Gly	Glu	Leu	Ile	Phe
				275					280					285
Ala	Gln	Ser	His	Gly	Glu	Leu	Ser	Thr	Glu	Asn	Val	Arg	Gln	Cys
				290					295					300
Val	Leu	Glu	Met	Ile	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Ile	Ser
				305					310					315
Leu	Phe	Phe	Met	Leu	Leu	Leu	Leu	Lys	Gln	Asn	Pro	Asp	Val	Glu
				320					325					330
Leu	Lys	Ile	Leu	Gln	Glu	Met	Asn	Ala	Val	Leu	Ala	Gly	Arg	Ser
				335					340					345
Leu	Gln	His	Ser	His	Leu	Ser	Gly	Leu	His	Ile	Leu	Glu	Ser	Phe
				350					355					360
Ile	Asn	Glu	Ser	Leu	Arg	Phe	His	Pro	Val	Val	Asp	Phe	Thr	Met
				365					370					375
Arg	Arg	Ala	Leu	Asp	Asp	Asp	Val	Ile	Glu	Gly	Tyr	Glu	Val	Lys
				380					385					390
Lys	Gly	Thr	Asn	Ile	Ile	Leu	Asn	Val	Gly	Arg	Met	His	Arg	Ser

				395					400					405
Glu	Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Ser	Leu	Asp	Asn	Phe	Gln
				410					415					420
Lys	Asn	Val	Pro	Ser	Arg	Phe	Phe	Gln	Pro	Phe	Gly	Ser	Gly	Pro
				425					430					435
Arg	Ser	Cys	Val	Gly	Lys	His	Ile	Ala	Met	Val	Met	Met	Lys	Ser
				440					445					450
Ile	Leu	Val	Thr	Leu	Leu	Ser	Arg	Phe	Ser	Val	Cys	Pro	Val	Lys
				455					460					465
Gly	Cys	Thr	Val	Asp	Ser	Ile	Pro	Gln	Thr	Asn	Asp	Leu	Ser	Gln
				470					475					480
Gln	Pro	Val	Glu	Glu	Pro	Ser								
				485										

<210> 5

<211> 484

<212> PRT

<213> Ictalurus punctatus

<400> 5

Met	Glu	Glu	Val	Leu	Lys	Gly	Thr	Val	Asn	Phe	Ala	Ala	Thr	Val
				005					010					015
Gln	Val	Thr	Leu	Met	Ala	Leu	Thr	Gly	Thr	Leu	Leu	Leu	Ile	Leu
				020					025					030
Leu	His	Arg	Ile	Phe	Thr	Ala	Lys	Asn	Trp	Arg	Asn	Gln	Ser	Gly
				035					040					045
Val	Pro	Gly	Pro	Gly	Trp	Leu	Leu	Gly	Leu	Gly	Pro	Ile	Met	Ser
				050					055					060
Tyr	Ser	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn	Tyr
				065					070					075
Tyr	Asn	Glu	Lys	Tyr	Gly	Ser	Ile	Ala	Arg	Val	Trp	Ile	Ser	Gly
				080					085					090
Glu	Glu	Thr	Phe	Ile	Leu	Ser	Lys	Ser	Ser	Ala	Val	Tyr	His	Val
				095					100					105
Leu	Lys	Ser	Asn	Asn	Tyr	Thr	Gly	Arg	Phe	Ala	Ser	Lys	Lys	Gly
				110					115					120
Leu	Gln	Cys	Ile	Gly	Met	Phe	Glu	Gln	Gly	Ile	Ile	Phe	Asn	Ser
				125					130					135
Asn	Met	Ala	Leu	Trp	Lys	Lys	Val	Arg	Thr	Tyr	Phe	Thr	Lys	Ala
				140					145					150
Leu	Thr	Gly	Pro	Gly	Leu	Gln	Lys	Ser	Val	Asp	Val	Cys	Val	Ser
				155					160					165
Ala	Thr	Asn	Lys	Gln	Leu	Asn	Val	Leu	Gln	Glu	Phe	Thr	Asp	His
				170					175					180
Ser	Gly	His	Val	Asp	Val	Leu	Asn	Leu	Leu	Arg	Cys	Ile	Val	Val
				185					190					195
Asp	Val	Ser	Asn	Arg	Leu	Phe	Leu	Arg	Ile	Pro	Leu	Asn	Glu	Lys
				200					205					210

Asp	Leu	Leu	Ile	Lys	Ile	His	Arg	Tyr	Phe	Ser	Thr	Trp	Gln	Ala	
				215					220					225	
Val	Leu	Ile	Gln	Pro	Asp	Val	Phe	Phe	Arg	Leu	Asn	Phe	Val	Tyr	
				230					235					240	
Lys	Lys	Tyr	His	Leu	Ala	Ala	Lys	Glu	Leu	Gln	Asp	Glu	Met	Gly	
				245					250					255	
Lys	Leu	Val	Glu	Gln	Lys	Arg	Gln	Ala	Ile	Asn	Asn	Met	Glu	Lys	
				260					265					270	
Leu	Asp	Glu	Thr	Asp	Phe	Ala	Thr	Glu	Leu	Ile	Phe	Ala	Gln	Asn	
				275					280					285	
His	Asp	Glu	Leu	Ser	Val	Asp	Asp	Val	Arg	Gln	Cys	Val	Leu	Glu	
				290					295					300	
Met	Val	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Ile	Ser	Leu	Phe	Phe	
				305					310					315	
Met	Leu	Leu	Leu	Leu	Lys	Gln	Asn	Ser	Val	Val	Glu	Glu	Gln	Ile	
				320					325					330	
Val	Gln	Glu	Ile	Gln	Ser	Gln	Ile	Gly	Glu	Arg	Asp	Val	Glu	Ser	
				335					340					345	
Ala	Asp	Leu	Gln	Lys	Leu	Asn	Val	Leu	Glu	Arg	Phe	Ile	Lys	Glu	
				350					355					360	
Ser	Leu	Arg	Phe	His	Pro	Val	Val	Asp	Phe	Ile	Met	Arg	Arg	Ala	
				365					370					375	
Leu	Glu	Asp	Asp	Glu	Ile	Asp	Gly	Tyr	Arg	Val	Ala	Lys	Gly	Thr	
				380					385					390	
Asn	Leu	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Lys	Ser	Glu	Phe	Phe	
				395					400					405	
Gln	Lys	Pro	Asn	Glu	Phe	Asn	Leu	Glu	Asn	Phe	Glu	Asn	Thr	Val	
				410					415					420	
Pro	Ser	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Cys	Gly	Pro	Arg	Ala	Cys	
				425					430					435	
Val	Gly	Lys	His	Ile	Ala	Met	Val	Met	Thr	Lys	Ala	Ile	Leu	Val	
				440					445					450	
Thr	Leu	Leu	Ser	Arg	Phe	Thr	Val	Cys	Pro	Arg	His	Gly	Cys	Thr	
				455					460					465	
Val	Ser	Thr	Ile	Lys	Gln	Thr	Asn	Asn	Leu	Ser	Met	Gln	Pro	Val	
				470					475					480	
Glu	Glu	Asp	Pro												

<210> 6

<211> 486

<212> PRT

<213> Carassius auratus

<400> 6

Val	Val	Asp	Leu	Leu	Ile	Gln	Arg	Ala	His	Asn	Gly	Thr	Glu	Arg	
				005					010					015	
Ala	Gln	Asp	Asn	Ala	Cys	Gly	Ala	Thr	Ala	Thr	Ile	Leu	Leu	Leu	
				020					025					030	

Leu	Leu	Cys	Leu	Leu	Leu	Ala	Ile	Arg	His	His	Arg	Pro	His	Lys
				035					040					045
Ser	His	Ile	Pro	Gly	Pro	Ser	Phe	Phe	Phe	Gly	Leu	Gly	Pro	Val
				050					055					060
Val	Ser	Tyr	Cys	Arg	Phe	Ile	Trp	Ser	Gly	Ile	Gly	Thr	Ala	Ser
				065					070					075
Asn	Tyr	Tyr	Asn	Ser	Lys	Tyr	Gly	Asp	Ile	Val	Arg	Val	Trp	Ile
				080					085					090
Asn	Gly	Glu	Glu	Thr	Leu	Ile	Leu	Ser	Arg	Ser	Ser	Ala	Val	Tyr
				095					100					105
His	Val	Leu	Arg	Lys	Ser	Leu	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys
				110					115					120
Leu	Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Gln	Gly	Ile	Ile	Phe
				125					130					135
Asn	Ser	Asn	Val	Ala	Leu	Trp	Lys	Lys	Val	Arg	Ala	Phe	Tyr	Ala
				140					145					150
Lys	Ala	Leu	Thr	Gly	Pro	Gly	Leu	Gln	Arg	Thr	Met	Glu	Ile	Cys
				155					160					165
Thr	Thr	Ser	Thr	Asn	Ser	His	Leu	Asp	Asp	Leu	Ser	Gln	Leu	Thr
				170					175					180
Asp	Ala	Gln	Gly	Gln	Leu	Asp	Ile	Leu	Asn	Leu	Leu	Arg	Cys	Ile
				185					190					195
Val	Val	Asp	Val	Ser	Asn	Arg	Leu	Phe	Leu	Gly	Val	Pro	Leu	Asn
				200					205					210
Glu	His	Asp	Leu	Leu	Gln	Lys	Ile	His	Lys	Tyr	Phe	Asp	Thr	Trp
				215					220					225
Gln	Thr	Val	Leu	Ile	Lys	Pro	Asp	Val	Tyr	Phe	Arg	Leu	Asp	Trp
				230					235					240
Leu	His	Arg	Lys	His	Lys	Arg	Asp	Ala	Gln	Glu	Leu	Gln	Asp	Ala
				245					250					255
Ile	Thr	Ala	Leu	Ile	Glu	Gln	Lys	Lys	Val	Gln	Leu	Ala	His	Ala
				260					265					270
Glu	Lys	Leu	Asp	His	Leu	Asp	Phe	Thr	Ala	Glu	Leu	Ile	Phe	Ala
				275					280					285
Gln	Ser	His	Gly	Glu	Leu	Ser	Ala	Glu	Asn	Val	Arg	Gln	Cys	Val
				290					295					300
Leu	Glu	Met	Val	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Ile	Ser	Leu
				305					310					315
Phe	Phe	Met	Leu	Leu	Leu	Leu	Lys	Gln	Asn	Pro	Asp	Val	Glu	Leu
				320					325					330
Lys	Ile	Leu	Gln	Glu	Met	Asp	Ser	Val	Leu	Ala	Gly	Gln	Ser	Leu
				335					340					345
Gln	His	Ser	His	Leu	Ser	Lys	Leu	Gln	Ile	Leu	Glu	Ser	Phe	Ile
				350					355					360
Asn	Glu	Ser	Leu	Arg	Phe	His	Pro	Val	Val	Asp	Phe	Thr	Met	Arg
				365					370					375
Arg	Ala	Leu	Asp	Asp	Asp	Val	Ile	Glu	Gly	Tyr	Asn	Val	Lys	Lys
				380					385					390

Gly	Thr	Asn	Ile	Ile	Leu	Asn	Val	Gly	Arg	Met	His	Arg	Ser	Glu	
				395					400					405	
Phe	Phe	Ser	Lys	Pro	Asn	Gln	Phe	Ser	Leu	Asp	Asn	Phe	His	Lys	
				410					415					420	
Asn	Val	Pro	Ser	Arg	Phe	Phe	Gln	Pro	Phe	Gly	Ser	Gly	Pro	Arg	
				425					430					435	
Ser	Cys	Val	Gly	Lys	His	Ile	Ala	Met	Val	Met	Met	Lys	Ser	Ile	
				440					445					450	
Leu	Val	Ala	Leu	Leu	Ser	Arg	Phe	Ser	Val	Cys	Pro	Met	Lys	Ala	
				455					460					465	
Cys	Thr	Val	Glu	Asn	Ile	Pro	Gln	Thr	Asn	Asn	Leu	Ser	Gln	Gln	
				470					475					480	
Pro	Val	Glu	Glu	Pro	Ser										
				485											

<210> 7

<211> 486

<212> PRT

<213> Sus scrofa (pig) placental

<400> 7

Met	Val	Leu	Glu	Met	Leu	Asn	Pro	Met	Tyr	Tyr	Lys	Ile	Thr	Ser	
				005					010					015	
Met	Val	Ser	Glu	Val	Val	Pro	Phe	Ala	Ser	Ile	Ala	Val	Leu	Leu	
				020					025					030	
Leu	Thr	Gly	Phe	Leu	Leu	Leu	Leu	Trp	Asn	Tyr	Glu	Asn	Thr	Ser	
				035					040					045	
Ser	Ile	Pro	Ser	Pro	Gly	Tyr	Phe	Leu	Gly	Ile	Gly	Pro	Leu	Ile	
				050					055					060	
Ser	His	Phe	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn	
				065					070					075	
Tyr	Tyr	Asn	Glu	Met	Tyr	Gly	Glu	Phe	Met	Arg	Val	Trp	Ile	Gly	
				080					085					090	
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Val	Phe	His	
				095					100					105	
Val	Met	Lys	His	Ser	His	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	Pro	
				110					115					120	
Gly	Leu	Glu	Cys	Ile	Gly	Met	Tyr	Glu	Lys	Gly	Ile	Ile	Phe	Asn	
				125					130					135	
Asn	Asp	Pro	Ala	Leu	Trp	Lys	Ala	Val	Arg	Thr	Tyr	Phe	Met	Lys	
				140					145					150	
Ala	Leu	Ser	Gly	Pro	Gly	Leu	Val	Arg	Met	Val	Thr	Val	Cys	Ala	
				155					160					165	
Asp	Ser	Ile	Thr	Lys	His	Leu	Asp	Lys	Leu	Glu	Glu	Val	Arg	Asn	
				170					175					180	
Asp	Leu	Gly	Tyr	Val	Asp	Val	Leu	Thr	Leu	Met	Arg	Arg	Ile	Met	
				185					190					195	
Leu	Asp	Thr	Ser	Asn	Asn	Leu	Phe	Leu	Gly	Ile	Pro	Leu	Asp	Glu	

Lys	Ala	Ile	Val	Cys	Lys	Ile	Gln	Gly	Tyr	Phe	Asp	Ala	Trp	Gln	200	205	210
				215					220					225			
Ala	Leu	Leu	Leu	Lys	Pro	Glu	Phe	Phe	Phe	Lys	Phe	Ser	Trp	Leu	230	235	240
				245					250					255			
Tyr	Lys	Lys	His	Lys	Glu	Ser	Val	Lys	Asp	Leu	Lys	Glu	Asn	Met	260	265	270
				275					280					285			
Glu	Ile	Leu	Ile	Glu	Lys	Lys	Arg	Cys	Ser	Ile	Ile	Thr	Ala	Glu	290	295	300
				305					310					315			
Lys	Leu	Glu	Asp	Cys	Met	Asp	Phe	Ala	Thr	Glu	Leu	Ile	Leu	Ala	320	325	330
				335					340					345			
Glu	Lys	Arg	Gly	Glu	Leu	Thr	Lys	Glu	Asn	Val	Asn	Gln	Cys	Ile	350	355	360
				365					370					375			
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Val	Thr	Val	380	385	390
				395					400					405			
Phe	Phe	Met	Leu	Phe	Leu	Ile	Ala	Lys	His	Pro	Gln	Val	Glu	Glu	410	415	420
				425					430					435			
Ala	Ile	Val	Lys	Glu	Ile	Gln	Thr	Val	Ile	Gly	Glu	Arg	Asp	Ile	440	445	450
				455					460					465			
Arg	Asn	Asp	Asp	Met	Gln	Lys	Leu	Lys	Val	Val	Glu	Asn	Phe	Ile	470	475	480
				485													
Tyr	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg			
				490					495								
Lys	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys			
				500					505					510			
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Arg	Leu	Glu			
				515					520					525			
Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Ala	Lys			
				530					535					540			
Asn	Val	Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg			
				545					550					555			
Ala	Cys	Ala	Gly	Lys	Tyr	Ile	Ala	Met	Val	Met	Met	Lys	Val	Thr			
				560					565					570			
Leu	Val	Ile	Leu	Leu	Arg	Arg	Phe	Gln	Val	Gln	Thr	Pro	Gln	Asp			
				575					580					585			
Arg	Cys	Val	Glu	Lys	Met	Gln	Lys	Lys	Asn	Asp	Leu	Ser	Leu	His			
				590					595					600			
Pro	Asp	Glu	Thr	Ser	Gly												
				605					610					615			

<210> 8

<211> 476

<212> PRT

<213> Sus scrofa (pig) embryo

<400> 8

Leu	Val	Ser	Ile	Ala	Pro	Asn	Thr	Thr	Val	Gly	Leu	Pro	Ser	Gly	005	010	015
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Ile	Pro	Met	Ala	Thr	Arg	Ser	Leu	Ile	Leu	Leu	Val	Cys	Leu	Leu	
				020					025						030
Leu	Met	Val	Trp	Ser	His	Ser	Glu	Lys	Lys	Thr	Ile	Pro	Gly	Pro	
				035					040						045
Ser	Phe	Cys	Leu	Gly	Leu	Gly	Pro	Leu	Met	Ser	Tyr	Leu	Arg	Phe	
				050					055						060
Ile	Trp	Thr	Gly	Ile	Gly	Thr	Ala	Ser	Asn	Tyr	Tyr	Asn	Asn	Lys	
				065					070						075
Tyr	Gly	Asp	Ile	Val	Arg	Val	Trp	Ile	Asn	Gly	Glu	Glu	Thr	Leu	
				080					085						090
Ile	Leu	Ser	Arg	Ala	Ser	Ala	Val	His	His	Val	Leu	Lys	Asn	Arg	
				095					100						105
Lys	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	Gln	Gly	Leu	Ser	Cys	Ile	
				110					115						120
Gly	Met	Asn	Glu	Lys	Gly	Ile	Ile	Phe	Asn	Asn	Asn	Val	Ala	Leu	
				125					130						135
Trp	Lys	Lys	Ile	Arg	Thr	Tyr	Phe	Thr	Lys	Ala	Leu	Thr	Gly	Pro	
				140					145						150
Asn	Leu	Gln	Gln	Thr	Val	Glu	Val	Cys	Val	Thr	Ser	Thr	Gln	Thr	
				155					160						165
His	Leu	Asp	Asn	Leu	Ser	Ser	Leu	Ser	Tyr	Val	Asp	Val	Leu	Gly	
				170					175						180
Phe	Leu	Arg	Cys	Thr	Val	Val	Asp	Ile	Ser	Asn	Arg	Leu	Phe	Leu	
				185					190						195
Gly	Val	Pro	Val	Asp	Glu	Lys	Glu	Leu	Leu	Gln	Lys	Ile	His	Lys	
				200					205						210
Tyr	Phe	Asp	Thr	Trp	Gln	Thr	Val	Leu	Ile	Lys	Pro	Asp	Ile	Tyr	
				215					220						225
Phe	Lys	Phe	Ser	Trp	Ile	His	Gln	Arg	His	Lys	Thr	Ala	Ala	Gln	
				230					235						240
Glu	Leu	Gln	Asp	Ala	Ile	Glu	Ser	Leu	Val	Glu	Arg	Lys	Arg	Lys	
				245					250						255
Glu	Met	Glu	Gln	Ala	Glu	Lys	Leu	Asp	Asn	Ile	Asn	Phe	Thr	Ala	
				260					265						270
Glu	Leu	Ile	Phe	Ala	Gln	Gly	His	Gly	Glu	Leu	Ser	Ala	Glu	Asn	
				275					280						285
Val	Arg	Gln	Cys	Val	Leu	Glu	Met	Val	Ile	Ala	Ala	Pro	Asp	Thr	
				290					295						300
Leu	Ser	Ile	Ser	Leu	Phe	Phe	Met	Leu	Leu	Leu	Leu	Lys	Gln	Asn	
				305					310						315
Pro	His	Val	Glu	Leu	Gln	Leu	Leu	Gln	Glu	Ile	Asp	Thr	Ile	Val	
				320					325						330
Gly	Asp	Ser	Gln	Leu	Gln	Asn	Gln	Asp	Leu	Gln	Lys	Leu	Gln	Val	
				335					340						345
Leu	Glu	Ser	Phe	Ile	Asn	Glu	Cys	Leu	Arg	Phe	His	Pro	Val	Val	
				350					355						360
Asp	Phe	Thr	Met	Arg	Arg	Ala	Leu	Phe	Asp	Asp	Ile	Ile	Asp	Gly	
				365					370						375

His	Arg	Val	Gln	Lys	Gly	Thr	Asn	Ile	Ile	Leu	Asn	Thr	Gly	Arg	
				380					385					390	
Met	His	Arg	Thr	Glu	Phe	Phe	His	Lys	Ala	Asn	Glu	Phe	Ser	Leu	
				395					400					405	
Glu	Asn	Phe	Gln	Lys	Asn	Thr	Pro	Arg	Arg	Tyr	Phe	Gln	Pro	Phe	
				410					415					420	
Gly	Ser	Gly	Pro	Arg	Ala	Cys	Val	Gly	Arg	His	Ile	Ala	Met	Val	
				425					430					435	
Met	Met	Lys	Ser	Ile	Leu	Val	Thr	Leu	Leu	Ser	Gln	Tyr	Ser	Val	
				440					445					450	
Cys	Pro	His	Glu	Gly	Leu	Thr	Leu	Asp	Cys	Leu	Pro	Gln	Thr	Asn	
				455					460					465	
Asn	Leu	Ser	Gln	Gln	Pro	Val	Glu	His	His	Gln					
				470					475						

<210> 9

<211> 484

<212> PRT

<213> Sus scrofa (pig) ovary

<400> 9

Met	Val	Leu	Glu	Met	Leu	Asn	Pro	Met	Asn	Ile	Ser	Ser	Met	Val	
				005					010					015	
Ser	Glu	Ala	Val	Leu	Phe	Gly	Ser	Ile	Ala	Ile	Leu	Leu	Leu	Ile	
				020					025					030	
Gly	Leu	Leu	Leu	Trp	Val	Trp	Asn	Tyr	Glu	Asp	Thr	Ser	Ser	Ile	
				035					040					045	
Pro	Gly	Pro	Gly	Tyr	Phe	Leu	Gly	Ile	Gly	Pro	Leu	Ile	Ser	His	
				050					055					060	
Phe	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn	Tyr	Tyr	
				065					070					075	
Asn	Lys	Met	Tyr	Gly	Glu	Phe	Met	Arg	Val	Trp	Ile	Gly	Gly	Glu	
				080					085					090	
Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Ile	Phe	His	Ile	Met	
				095					100					105	
Lys	His	Asn	His	Tyr	Thr	Cys	Arg	Phe	Gly	Ser	Lys	Leu	Gly	Leu	
				110					115					120	
Glu	Cys	Ile	Gly	Met	His	Glu	Lys	Gly	Ile	Met	Phe	Asn	Asn	Asn	
				125					130					135	
Pro	Ala	Leu	Trp	Lys	Ala	Val	Arg	Pro	Phe	Phe	Thr	Lys	Ala	Leu	
				140					145					150	
Ser	Gly	Pro	Gly	Leu	Val	Arg	Met	Val	Thr	Val	Cys	Ala	Asp	Ser	
				155					160					165	
Ile	Thr	Lys	His	Leu	Asp	Lys	Leu	Glu	Glu	Val	Arg	Asn	Asp	Leu	
				170					175					180	
Gly	Tyr	Val	Asp	Val	Leu	Thr	Leu	Met	Arg	Arg	Ile	Met	Leu	Asp	
				185					190					195	
Thr	Ser	Asn	Asn	Leu	Phe	Leu	Gly	Ile	Pro	Leu	Asp	Glu	Ser	Ala	

	200		205		210
Leu Val His Lys Val Gln Gly Tyr Phe Asp Ala Trp Gln Ala Leu					
	215		220		225
Leu Leu Lys Pro Asp Ile Phe Phe Lys Ile Ser Trp Leu Tyr Arg					
	230		235		240
Lys Tyr Glu Lys Ser Val Lys Asp Leu Lys Asp Ala Met Glu Ile					
	245		250		255
Leu Ile Glu Glu Lys Arg His Arg Ile Ser Thr Ala Glu Lys Leu					
	260		265		270
Glu Asp Ser Met Asp Phe Thr Thr Gln Leu Ile Phe Ala Glu Lys					
	275		280		285
Arg Gly Glu Leu Thr Lys Glu Asn Val Asn Gln Cys Val Leu Glu					
	290		295		300
Met Met Ile Ala Ala Pro Asp Thr Met Ser Ile Thr Val Phe Phe					
	305		310		315
Met Leu Phe Leu Ile Ala Asn His Pro Gln Val Glu Glu Glu Leu					
	320		325		330
Met Lys Glu Ile Tyr Thr Val Val Gly Glu Arg Asp Ile Arg Asn					
	335		340		345
Asp Asp Met Gln Lys Leu Lys Val Val Glu Asn Phe Ile Tyr Glu					
	350		355		360
Ser Met Arg Tyr Gln Pro Val Val Asp Phe Val Met Arg Lys Ala					
	365		370		375
Leu Glu Asp Asp Val Ile Asp Gly Tyr Pro Val Lys Lys Gly Thr					
	380		385		390
Asn Ile Ile Leu Asn Ile Gly Arg Met His Arg Leu Glu Phe Phe					
	395		400		405
Pro Lys Pro Asn Glu Phe Thr Leu Glu Asn Phe Ala Lys Asn Val					
	410		415		420
Pro Tyr Arg Tyr Phe Gln Pro Phe Gly Phe Gly Pro Arg Ala Cys					
	425		430		435
Ala Gly Lys Tyr Ile Ala Met Val Met Met Lys Val Ile Leu Val					
	440		445		450
Thr Leu Leu Arg Arg Phe Gln Val Gln Thr Gln Gln Gly Gln Cys					
	455		460		465
Val Glu Lys Met Gln Lys Lys Asn Asp Leu Ser Leu His Pro His					
	470		475		480
Glu Thr Ser Gly					

<210> 10

<211> 486

<212> PRT

<213> Bos taurus

<400> 10

Met Val Leu Glu Met Leu Asn Pro Met His Phe Asn Ile Thr Thr					
	005		010		015
Met Val Pro Ala Ala Met Pro Ala Ala Thr Met Pro Ile Leu Leu					

				020					025					030
Leu	Thr	Cys	Leu	Leu	Leu	Ile	Trp	Asn	Tyr	Glu	Gly	Thr	Ser	
				035				040						045
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Cys	Met	Gly	Ile	Gly	Pro	Leu	Ile
				050				055						060
Ser	Tyr	Ala	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn
				065				070						075
Tyr	Tyr	Asn	Lys	Met	Tyr	Gly	Glu	Phe	Ile	Arg	Val	Trp	Ile	Cys
				080				085						090
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Met	Phe	His
				095				100						105
Val	Met	Lys	His	Ser	His	Tyr	Val	Ser	Arg	Phe	Gly	Ser	Lys	Pro
				110				115						120
Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Asn	Gly	Ile	Ile	Phe	Asn
				125				130						135
Asn	Asn	Pro	Ala	Leu	Trp	Lys	Val	Val	Arg	Pro	Phe	Phe	Met	Lys
				140				145						150
Ala	Leu	Thr	Gly	Pro	Gly	Leu	Val	Gln	Met	Val	Ala	Ile	Cys	Val
				155				160						165
Gly	Ser	Ile	Gly	Arg	His	Leu	Asp	Lys	Leu	Glu	Glu	Val	Thr	Thr
				170				175						180
Arg	Ser	Gly	Cys	Val	Asp	Val	Leu	Thr	Leu	Met	Arg	Arg	Ile	Met
				185				190						195
Leu	Asp	Thr	Ser	Asn	Thr	Leu	Phe	Leu	Gly	Ile	Pro	Met	Asp	Glu
				200				205						210
Ser	Ala	Ile	Val	Val	Lys	Ile	Gln	Gly	Tyr	Phe	Asp	Ala	Trp	Gln
				215				220						225
Ala	Leu	Leu	Leu	Lys	Pro	Asn	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu
				230				235						240
Tyr	Lys	Lys	Tyr	Glu	Lys	Ser	Val	Lys	Asp	Leu	Lys	Asp	Ala	Ile
				245				250						255
Asp	Ile	Leu	Val	Glu	Lys	Lys	Arg	Arg	Arg	Ile	Ser	Thr	Ala	Glu
				260				265						270
Lys	Leu	Glu	Asp	His	Met	Asp	Phe	Ala	Thr	Asn	Leu	Ile	Phe	Ala
				275				280						285
Glu	Lys	Arg	Gly	Asp	Leu	Thr	Arg	Glu	Asn	Val	Asn	Gln	Cys	Val
				290				295						300
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Ser	Val
				305				310						315
Phe	Phe	Met	Leu	Phe	Leu	Ile	Ala	Lys	His	Pro	Ser	Val	Glu	Glu
				320				325						330
Ala	Ile	Met	Glu	Glu	Ile	Gln	Thr	Val	Val	Gly	Glu	Arg	Asp	Ile
				335				340						345
Arg	Ile	Asp	Asp	Ile	Gln	Lys	Leu	Lys	Val	Val	Glu	Asn	Phe	Ile
				350				355						360
Tyr	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg
				365				370						375
Lys	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys

	380		385		390
Gly Thr Asn Ile	Ile Leu Asn Ile Gly	Arg Met His Arg Leu	Glu		
	395		400		405
Phe Phe Pro Lys	Pro Asn Glu Phe Thr	Leu Glu Asn Phe Ala	Lys		
	410		415		420
Asn Val Pro Tyr	Arg Tyr Phe Gln Pro	Phe Gly Phe Gly Pro	Arg		
	425		430		435
Gly Cys Ala Gly	Lys Tyr Ile Ala Met	Val Met Met Lys Val	Ile		
	440		445		450
Leu Val Thr Leu	Leu Arg Arg Phe Gln	Val Lys Ala Leu Gln	Gly		
	455		460		465
Arg Ser Val Glu	Asn Ile Gln Lys Lys	Asn Asp Leu Ser Leu	His		
	470		475		480
Pro Asp Glu Thr	Ser Asp				
	485				

<210> 11

<211> 485

<212> PRT

<213> Equus caballus

<400> 11

Val Met Glu Ile	Leu Leu Arg Glu Ala	Arg Asn Gly Thr Asp	Pro		
	005		010		015
Arg Tyr Glu Asn	Pro Arg Gly Ile Thr	Leu Leu Leu Leu Leu	Cys		
	020		025		030
Leu Val Leu Leu	Leu Thr Val Trp Asn	Arg His Glu Lys Lys	Cys		
	035		040		045
Ser Ile Pro Gly	Pro Ser Phe Cys Leu	Gly Leu Gly Pro Leu	Met		
	050		055		060
Ser Tyr Cys Arg	Phe Ile Trp Met Gly	Ile Gly Thr Ala Ser	Asn		
	065		070		075
Tyr Tyr Asn Glu	Lys Tyr Gly Asp Met	Val Arg Val Trp Ile	Ser		
	080		085		090
Gly Glu Glu Thr	Leu Val Leu Ser Arg	Pro Ser Ala Val Tyr	His		
	095		100		105
Val Leu Lys His	Ser Gln Tyr Thr Ser	Arg Phe Gly Ser Lys	Leu		
	110		115		120
Gly Leu Gln Cys	Ile Gly Met His Glu	Gln Gly Ile Ile Phe	Asn		
	125		130		135
Ser Asn Val Thr	Leu Trp Arg Lys Val	Arg Thr Tyr Phe Ala	Lys		
	140		145		150
Ala Leu Thr Gly	Pro Gly Leu Gln Arg	Thr Leu Glu Ile Cys	Thr		
	155		160		165
Met Ser Thr Asn	Thr His Leu Asp Gly	Leu Ser Arg Leu Thr	Asp		
	170		175		180
Ala Gln Gly His	Val Asp Val Leu Asn	Leu Leu Arg Cys Ile	Val		
	185		190		195

Val	Asp	Ile	Ser	Asn	Arg	Leu	Phe	Leu	Asp	Val	Pro	Leu	Asn	Glu			
				200					205					210			
Gln	Asn	Leu	Leu	Phe	Lys	Ile	His	Arg	Tyr	Phe	Glu	Thr	Trp	Gln			
				215					220					225			
Thr	Val	Leu	Ile	Lys	Pro	Asp	Phe	Tyr	Phe	Arg	Leu	Lys	Trp	Leu			
				230					235					240			
His	Asp	Lys	His	Arg	Asn	Ala	Ala	Gln	Glu	Leu	His	Asp	Ala	Ile			
				245					250					255			
Glu	Asp	Leu	Ile	Glu	Gln	Lys	Arg	Thr	Glu	Leu	Gln	Gln	Ala	Glu			
				260					265					270			
Lys	Leu	Asp	Asn	Leu	Asn	Phe	Thr	Glu	Glu	Leu	Ile	Phe	Ala	Gln			
				275					280					285			
Ser	His	Gly	Glu	Leu	Thr	Ala	Glu	Asn	Val	Arg	Gln	Cys	Val	Leu			
				290					295					300			
Glu	Met	Val	Ile	Ala	Ala	Pro	Asp	Thr	Leu	Ser	Ile	Ser	Val	Phe			
				305					310					315			
Phe	Met	Leu	Leu	Leu	Leu	Lys	Gln	Asn	Ala	Glu	Val	Glu	Arg	Arg			
				320					325					330			
Ile	Leu	Thr	Glu	Ile	His	Thr	Val	Leu	Gly	Asp	Thr	Glu	Leu	Gln			
				335					340					345			
His	Ser	His	Leu	Ser	Gln	Leu	His	Val	Leu	Glu	Cys	Phe	Ile	Asn			
				350					355					360			
Glu	Ala	Leu	Arg	Phe	His	Pro	Val	Val	Asp	Phe	Ser	Tyr	Arg	Arg			
				365					370					375			
Ala	Leu	Asp	Asp	Asp	Val	Ile	Glu	Gly	Phe	Arg	Val	Pro	Arg	Gly			
				380					385					390			
Thr	Asn	Ile	Ile	Leu	Asn	Val	Gly	Arg	Met	His	Arg	Ser	Glu	Phe			
				395					400					405			
Tyr	Pro	Lys	Pro	Ala	Asp	Phe	Ser	Leu	Asp	Asn	Phe	Asn	Lys	Pro			
				410					415					420			
Val	Pro	Ser	Arg	Phe	Phe	Gln	Pro	Phe	Gly	Ser	Gly	Pro	Arg	Ser			
				425					430					435			
Cys	Val	Gly	Lys	His	Ile	Ala	Met	Val	Met	Met	Lys	Ala	Val	Leu			
				440					445					450			
Leu	Met	Val	Leu	Ser	Arg	Phe	Ser	Val	Cys	Pro	Glu	Glu	Ser	Cys			
				455					460					465			
Thr	Val	Glu	Asn	Ile	Ala	His	Thr	Asn	Asp	Leu	Ser	Gln	Gln	Pro			
				470					475					480			
Val	Glu	Asp	Lys	His													
				485													

<210> 12

<211> 486

<212> PRT

<213> Mus musculus

<400> 12

Met Val Leu Glu Thr Leu Asn Pro Leu His Tyr Asn Ile Thr Ser

Leu Val Pro Asp	005	Thr Met Pro Val Ala	010	Thr Val Pro Ile Leu	015
	020		025		030
Leu Met Cys Phe	035	Leu Phe Leu Ile Trp	040	Asn His Glu Glu Thr	045
Ser Ile Pro Gly	050	Pro Gly Tyr Cys Met	055	Gly Ile Gly Pro Leu	060
Ser His Gly Arg	065	Phe Leu Trp Met Gly	070	Val Gly Asn Ala Cys	075
Tyr Tyr Asn Lys	080	Thr Tyr Gly Asp Phe	085	Val Arg Val Trp Ile	090
Gly Glu Glu Thr	095	Phe Ile Ile Ser Lys	100	Ser Ser Ser Val Ser	105
Val Met Lys His	110	Trp His Tyr Val Ser	115	Arg Phe Gly Ser Lys	120
Gly Leu Gln Cys	125	Ile Gly Met Tyr Glu	130	Asn Gly Ile Ile Phe	135
Asn Asn Pro Ala	140	His Trp Lys Glu Ile	145	Arg Pro Phe Phe Thr	150
Ala Leu Ser Gly	155	Pro Gly Leu Val Arg	160	Met Ile Ala Ile Cys	165
Glu Ser Thr Thr	170	Glu His Leu Asp Arg	175	Leu Gln Glu Val Thr	180
Glu Leu Gly Asn	185	Ile Asn Ala Leu Asn	190	Leu Met Arg Arg Ile	195
Leu Asp Thr Ser	200	Asn Lys Leu Phe Leu	205	Gly Val Pro Leu Asp	210
Asn Ala Ile Val	215	Leu Lys Ile Gln Asn	220	Tyr Phe Asp Ala Trp	225
Ala Leu Leu Leu	230	Lys Pro Asp Ile Phe	235	Phe Lys Ile Ser Trp	240
Cys Lys Lys Tyr	245	Lys Asp Ala Val Lys	250	Asp Leu Lys Gly Ala	255
Glu Ile Leu Ile	260	Glu Gln Lys Arg Gln	265	Lys Leu Ser Thr Val	270
Lys Leu Asp Glu	275	His Met Asp Phe Ala	280	Ser Gln Leu Ile Phe	285
Gln Asn Arg Gly	290	Asp Leu Thr Ala Glu	295	Asn Val Asn Gln Cys	300
Leu Glu Met Met	305	Ile Ala Ala Pro Asp	310	Thr Leu Ser Val Thr	315
Phe Phe Met Leu	320	Ile Leu Ile Ala Glu	325	His Pro Thr Val Glu	330
Glu Met Met Arg	335	Glu Ile Glu Thr Val	340	Val Gly Asp Arg Asp	345
Gln Ser Asp Asp	350	Met Pro Asn Leu Lys	355	Ile Val Glu Asn Phe	360
Tyr Glu Ser Met		Arg Tyr Gln Pro Val		Val Asp Leu Ile Met	Arg

Lys	Ala	Leu	Gln	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	365	370	375
				380					385							390	
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Lys	Leu	Glu			
				395					400							405	
Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Ser	Leu	Glu	Asn	Phe	Glu	Lys			
				410					415							420	
Asn	Val	Pro	Ser	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg			
				425					430							435	
Ser	Cys	Val	Gly	Lys	Phe	Ile	Ala	Met	Val	Met	Met	Lys	Ala	Ile			
				440					445							450	
Leu	Val	Thr	Leu	Leu	Arg	Arg	Cys	Arg	Val	Gln	Thr	Met	Lys	Gly			
				455					460							465	
Arg	Gly	Leu	Asn	Asn	Ile	Gln	Lys	Asn	Asn	Asp	Leu	Ser	Met	His			
				470					475							480	
Pro	Ile	Glu	Arg	Gln	Pro												
				485													

<210> 13

<211> 478

<212> PRT

<213> Rattus norvegicus

<400> 13

Val	Val	Ala	Arg	Ser	Leu	Cys	Asp	Leu	Lys	Cys	His	Pro	Ile	Asp		
				005					010					015		
Gly	Ile	Ser	Met	Ala	Thr	Arg	Thr	Leu	Ile	Leu	Leu	Val	Cys	Leu		
				020					025					030		
Leu	Leu	Val	Ala	Trp	Ser	His	Thr	Asp	Lys	Lys	Ile	Val	Pro	Gly		
				035					040					045		
Pro	Ser	Phe	Cys	Leu	Gly	Leu	Gly	Pro	Leu	Leu	Ser	Tyr	Leu	Arg		
				050					055					060		
Phe	Ile	Trp	Thr	Gly	Ile	Gly	Thr	Ala	Ser	Asn	Tyr	Tyr	Asn	Asn		
				065					070					075		
Lys	Tyr	Gly	Asp	Ile	Val	Arg	Val	Trp	Ile	Asn	Gly	Glu	Glu	Thr		
				080					085					090		
Leu	Ile	Leu	Ser	Arg	Ser	Ser	Ala	Val	His	His	Val	Leu	Lys	Asn		
				095					100					105		
Gly	Asn	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Ile	Gln	Gly	Leu	Ser	Tyr		
				110					115					120		
Leu	Gly	Met	Asn	Glu	Arg	Gly	Ile	Ile	Phe	Asn	Asn	Asn	Val	Thr		
				125					130					135		
Leu	Trp	Lys	Lys	Ile	Arg	Thr	Tyr	Phe	Ala	Lys	Ala	Leu	Thr	Gly		
				140					145					150		
Pro	Asn	Leu	Gln	Gln	Thr	Val	Asp	Val	Cys	Val	Ser	Ser	Ile	Gln		
				155					160					165		
Ala	His	Leu	Asp	His	Leu	Asp	Ser	Leu	Gly	His	Val	Asp	Val	Leu		
				170					175					180		

Asn	Leu	Leu	Arg	Cys	Thr	Val	Leu	Asp	Ile	Ser	Asn	Arg	Leu	Phe	185	190	195
Leu	Asn	Val	Pro	Leu	Asn	Glu	Lys	Glu	Leu	Met	Leu	Lys	Ile	Gln	200	205	210
Lys	Tyr	Phe	His	Thr	Trp	Gln	Asp	Val	Leu	Ile	Lys	Pro	Asp	Ile	215	220	225
Tyr	Phe	Lys	Phe	Arg	Trp	Ile	His	His	Arg	His	Lys	Thr	Ala	Thr	230	235	240
Gln	Glu	Leu	Gln	Asp	Ala	Ile	Lys	Arg	Leu	Val	Asp	Gln	Lys	Arg	245	250	255
Lys	Asn	Met	Glu	Gln	Ala	Asp	Lys	Leu	Asp	Asn	Ile	Asn	Phe	Thr	260	265	270
Ala	Glu	Leu	Ile	Phe	Ala	Gln	Asn	His	Gly	Glu	Leu	Ser	Ala	Glu	275	280	285
Asn	Val	Thr	Gln	Cys	Val	Leu	Glu	Met	Val	Ile	Ala	Ala	Pro	Asp	290	295	300
Thr	Leu	Ser	Leu	Ser	Leu	Phe	Phe	Met	Leu	Leu	Leu	Leu	Lys	Gln	305	310	315
Asn	Pro	His	Val	Glu	Pro	Gln	Leu	Leu	Gln	Glu	Ile	Asp	Ala	Val	320	325	330
Val	Gly	Glu	Arg	Gln	Leu	Gln	Asn	Gln	Asp	Leu	His	Lys	Leu	Gln	335	340	345
Val	Met	Glu	Ser	Phe	Ile	Tyr	Glu	Cys	Leu	Ser	Phe	His	Pro	Val	350	355	360
Val	Asp	Phe	Thr	Met	Arg	Arg	Ala	Leu	Ser	Asp	Asp	Ile	Ile	Glu	365	370	375
Gly	Tyr	Arg	Ile	Ser	Lys	Gly	Thr	Asn	Ile	Ile	Leu	Asn	Thr	Gly	380	385	390
Arg	Met	His	Arg	Thr	Glu	Phe	Phe	Leu	Lys	Gly	Asn	Gln	Phe	Asn	395	400	405
Leu	Glu	His	Phe	Glu	Asn	Asn	Val	Pro	Arg	Pro	Pro	Thr	Phe	Gln	410	415	420
Pro	Phe	Gly	Ser	Gly	Pro	Arg	Ala	Cys	Ile	Gly	Lys	His	Met	Ala	425	430	435
Met	Val	Met	Met	Lys	Ser	Ile	Leu	Val	Thr	Leu	Leu	Ser	Gln	Tyr	440	445	450
Ser	Val	Cys	Thr	His	Glu	Gly	Pro	Ile	Leu	Asp	Cys	Leu	Pro	Gln	455	460	465
Thr	Asn	Asn	Leu	Ser	Gln	Gln	Pro	Val	Glu	His	Gln	Gln			470	475	

<210> 14

<211> 478

<212> PRT

<213> *Oryctolagus cuniculus*

<400> 14

Met Leu Leu Glu Val Leu Asn Pro Arg His Tyr Asn Val Thr Ser

005				010				015						
Met	Val	Ser	Glu	Val	Val	Pro	Ile	Ala	Ser	Ile	Ala	Ile	Leu	Leu
			020						025					030
Leu	Thr	Gly	Phe	Leu	Leu	Val	Trp	Asn	Tyr	Glu	Asp	Thr	Ser	
			035						040					045
Ser	Ile	Pro	Gly	Pro	Ser	Tyr	Phe	Leu	Gly	Ile	Gly	Pro	Leu	Ile
			050						055					060
Ser	His	Cys	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn
			065						070					075
Tyr	Tyr	Asn	Lys	Met	Tyr	Gly	Glu	Phe	Met	Arg	Val	Trp	Val	Cys
			080						085					090
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Met	Phe	His
			095						100					105
Val	Met	Lys	His	Ser	His	Tyr	Ile	Ser	Arg	Phe	Gly	Ser	Lys	Leu
			110						115					120
Gly	Leu	Gln	Phe	Ile	Gly	Met	His	Glu	Lys	Gly	Ile	Ile	Phe	Asn
			125						130					135
Asn	Asn	Pro	Ala	Leu	Trp	Lys	Ala	Val	Arg	Pro	Phe	Phe	Thr	Lys
			140						145					150
Ala	Leu	Ser	Gly	Pro	Gly	Leu	Val	Arg	Met	Val	Thr	Ile	Cys	Ala
			155						160					165
Asp	Ser	Ile	Thr	Lys	His	Leu	Asp	Arg	Leu	Glu	Glu	Val	Cys	Asn
			170						175					180
Asp	Leu	Gly	Tyr	Val	Asp	Val	Leu	Thr	Leu	Met	Arg	Arg	Ile	Met
			185						190					195
Leu	Asp	Thr	Ser	Asn	Met	Leu	Phe	Leu	Gly	Ile	Pro	Leu	Asp	Glu
			200						205					210
Ser	Ala	Ile	Val	Val	Asn	Ile	Gln	Gly	Tyr	Phe	Asp	Ala	Trp	Gln
			215						220					225
Ala	Leu	Leu	Leu	Lys	Pro	Asp	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu
			230						235					240
Cys	Arg	Lys	Tyr	Glu	Lys	Ser	Val	Lys	Asp	Leu	Lys	Asp	Ala	Met
			245						250					255
Glu	Ile	Leu	Ile	Ala	Glu	Lys	Arg	His	Arg	Ile	Ser	Thr	Ala	Glu
			260						265					270
Lys	Leu	Glu	Asp	Ser	Ile	Asp	Phe	Ala	Thr	Glu	Leu	Ile	Phe	Ala
			275						280					285
Glu	Lys	Arg	Gly	Glu	Leu	Thr	Arg	Glu	Asn	Val	Asn	Gln	Cys	Ile
			290						295					300
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Ser	Val
			305						310					315
Phe	Phe	Met	Leu	Phe	Leu	Ile	Ala	Lys	His	Pro	Gln	Val	Glu	Glu
			320						325					330
Ala	Ile	Ile	Arg	Glu	Ile	Gln	Thr	Val	Val	Gly	Glu	Arg	Asp	Ile
			335						340					345
Arg	Ile	Asp	Asp	Met	Gln	Lys	Leu	Lys	Val	Val	Glu	Asn	Phe	Ile
			350						355					360
Asn	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg

	365		370		375
Lys Ala Leu Glu Asp Asp Val Ile Asp Gly Tyr Pro Val Lys Lys					
	380		385		390
Gly Thr Asn Ile Ile Leu Asn Leu Gly Arg Met His Arg Leu Glu					
	395		400		405
Phe Phe Pro Lys Pro Asn Glu Phe Thr Leu Glu Asn Phe Ala Lys					
	410		415		420
Asn Val Pro Tyr Arg Tyr Phe Gln Pro Phe Gly Phe Gly Pro Arg					
	425		430		435
Gly Cys Ala Gly Lys Tyr Ile Ala Met Val Met Met Lys Val Val					
	440		445		450
Leu Val Thr Leu Leu Arg Arg Phe His Val Gln Thr Leu Gln Gly					
	455		460		465
Arg Cys Val Glu Lys Met Gln Lys Lys Asn Asp Leu Ser Leu His					
	470		475		480
Pro Asp Glu Thr Arg Asp					
	485				

<210> 15

<211> 486

<212> PRT

<213> Homo sapiens

<400> 15

Met Val Leu Glu Met Leu Asn Pro Ile His Tyr Asn Ile Thr Ser					
	005		010		015
Ile Val Pro Glu Ala Met Pro Ala Ala Thr Met Pro Val Leu Leu					
	020		025		030
Leu Thr Gly Leu Phe Leu Leu Val Trp Asn Tyr Glu Gly Thr Ser					
	035		040		045
Ser Ile Pro Gly Pro Gly Tyr Cys Met Gly Ile Gly Pro Leu Ile					
	050		055		060
Ser His Gly Arg Phe Leu Trp Met Gly Ile Gly Ser Ala Cys Asn					
	065		070		075
Tyr Tyr Asn Arg Val Tyr Gly Glu Phe Met Arg Val Trp Ile Ser					
	080		085		090
Gly Glu Glu Thr Leu Ile Ile Ser Lys Ser Ser Ser Met Phe His					
	095		100		105
Ile Met Lys His Asn His Tyr Ser Ser Arg Phe Gly Ser Lys Leu					
	110		115		120
Gly Leu Gln Cys Ile Gly Met His Glu Lys Gly Ile Ile Phe Asn					
	125		130		135
Asn Asn Pro Glu Leu Trp Lys Thr Thr Arg Pro Phe Phe Met Lys					
	140		145		150
Ala Leu Ser Gly Pro Gly Leu Val Arg Met Val Thr Val Cys Ala					
	155		160		165
Glu Ser Leu Lys Thr His Leu Asp Arg Leu Glu Glu Val Thr Asn					
	170		175		180

Glu	Ser	Gly	Tyr	Val	Asp	Val	Leu	Thr	Leu	Leu	Arg	Arg	Val	Met	185	190	195
Leu	Asp	Thr	Ser	Asn	Thr	Leu	Phe	Leu	Arg	Ile	Pro	Leu	Asp	Glu	200	205	210
Ser	Ala	Ile	Val	Val	Lys	Ile	Gln	Gly	Tyr	Phe	Asp	Ala	Trp	Gln	215	220	225
Ala	Leu	Leu	Ile	Lys	Pro	Asp	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu	230	235	240
Tyr	Lys	Lys	Tyr	Glu	Lys	Ser	Val	Lys	Asp	Leu	Lys	Asp	Ala	Ile	245	250	255
Glu	Val	Leu	Ile	Ala	Glu	Lys	Arg	Arg	Arg	Ile	Ser	Thr	Glu	Glu	260	265	270
Lys	Leu	Glu	Glu	Cys	Met	Asp	Phe	Ala	Thr	Glu	Leu	Ile	Leu	Ala	275	280	285
Glu	Lys	Arg	Gly	Asp	Leu	Thr	Arg	Glu	Asn	Val	Asn	Gln	Cys	Ile	290	295	300
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Ser	Leu	305	310	315
Phe	Phe	Met	Leu	Phe	Leu	Ile	Ala	Lys	His	Pro	Asn	Val	Glu	Glu	320	325	330
Ala	Ile	Ile	Lys	Glu	Ile	Gln	Thr	Val	Ile	Gly	Glu	Arg	Asp	Ile	335	340	345
Lys	Ile	Asp	Asp	Ile	Gln	Lys	Leu	Lys	Val	Met	Glu	Asn	Phe	Ile	350	355	360
Tyr	Glu	Ser	Met	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg	365	370	375
Lys	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	380	385	390
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Arg	Leu	Glu	395	400	405
Phe	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Ala	Lys	410	415	420
Asn	Val	Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	425	430	435
Gly	Cys	Ala	Gly	Lys	Tyr	Ile	Ala	Met	Val	Met	Met	Lys	Ala	Ile	440	445	450
Leu	Val	Thr	Leu	Leu	Arg	Arg	Phe	His	Val	Lys	Thr	Leu	Gln	Gly	455	460	465
Gln	Cys	Val	Glu	Ser	Ile	Gln	Lys	Ile	His	Asp	Leu	Ser	Leu	His	470	475	480
Pro	Asp	Glu	Thr	Lys	Asn										485		

<210> 16

<211> 466

<212> PRT

<213> Gallus gallus

<400> 16

Met	Pro	Val	Ala	Thr	Val	Pro	Ile	Ile	Ile	Leu	Ile	Cys	Phe	Leu	
				005					010					015	
Phe	Leu	Ile	Trp	Asn	His	Glu	Glu	Thr	Ser	Ser	Ile	Pro	Gly	Pro	
				020					025					030	
Gly	Tyr	Cys	Met	Gly	Ile	Gly	Pro	Leu	Ile	Ser	His	Gly	Arg	Phe	
				035					040					045	
Leu	Trp	Met	Gly	Val	Gly	Asn	Ala	Cys	Asn	Tyr	Tyr	Asn	Lys	Thr	
				050					055					060	
Tyr	Gly	Glu	Phe	Val	Arg	Val	Trp	Ile	Ser	Gly	Glu	Glu	Thr	Phe	
				065					070					075	
Ile	Ile	Ser	Lys	Ser	Ser	Ser	Val	Phe	His	Val	Met	Lys	His	Trp	
				080					085					090	
Asn	Tyr	Val	Ser	Arg	Phe	Gly	Ser	Lys	Leu	Gly	Leu	Gln	Cys	Ile	
				095					100					105	
Gly	Met	Tyr	Glu	Asn	Gly	Ile	Ile	Phe	Asn	Asn	Asn	Pro	Ala	His	
				110					115					120	
Trp	Lys	Glu	Ile	Arg	Pro	Phe	Phe	Thr	Lys	Ala	Leu	Ser	Gly	Pro	
				125					130					135	
Gly	Leu	Val	Arg	Met	Ile	Ala	Ile	Cys	Val	Glu	Ser	Thr	Ile	Val	
				140					145					150	
His	Leu	Asp	Lys	Leu	Glu	Glu	Val	Thr	Thr	Glu	Val	Gly	Asn	Val	
				155					160					165	
Asn	Val	Leu	Asn	Leu	Met	Arg	Arg	Ile	Met	Leu	Asp	Thr	Ser	Asn	
				170					175					180	
Lys	Leu	Phe	Leu	Gly	Val	Pro	Leu	Asp	Glu	Ser	Ala	Ile	Val	Leu	
				185					190					195	
Lys	Ile	Gln	Asn	Tyr	Phe	Asp	Ala	Trp	Gln	Ala	Leu	Leu	Leu	Lys	
				200					205					210	
Pro	Asp	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu	Cys	Lys	Lys	Tyr	Glu	
				215					220					225	
Glu	Ala	Ala	Lys	Asp	Leu	Lys	Gly	Ala	Met	Glu	Ile	Leu	Ile	Glu	
				230					235					240	
Gln	Lys	Arg	Gln	Lys	Leu	Ser	Thr	Val	Glu	Lys	Leu	Asp	Glu	His	
				245					250					255	
Met	Asp	Phe	Ala	Ser	Gln	Leu	Ile	Phe	Ala	Gln	Asn	Arg	Gly	Asp	
				260					265					270	
Leu	Thr	Ala	Glu	Asn	Val	Asn	Gln	Cys	Val	Leu	Glu	Met	Met	Ile	
				275					280					285	
Ala	Ala	Pro	Asp	Thr	Leu	Ser	Val	Thr	Leu	Phe	Ile	Met	Leu	Ile	
				290					295					300	
Leu	Ile	Ala	Asp	Asp	Pro	Thr	Val	Glu	Glu	Lys	Met	Met	Arg	Glu	
				305					310					315	
Ile	Glu	Thr	Val	Met	Gly	Asp	Arg	Glu	Val	Gln	Ser	Asp	Asp	Met	
				320					325					330	
Pro	Asn	Leu	Lys	Ile	Val	Glu	Asn	Phe	Ile	Tyr	Glu	Ser	Met	Arg	
				335					340					345	
Tyr	Gln	Pro	Val	Val	Asp	Leu	Ile	Met	Arg	Lys	Ala	Leu	Gln	Asp	

				350					355				360
Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys	Gly	Thr	Asn	Ile
				365					370				375
Leu	Asn	Ile	Gly	Arg	Met	His	Lys	Leu	Glu	Phe	Phe	Pro	Lys
				380					385				390
Asn	Glu	Phe	Ser	Leu	Glu	Asn	Phe	Glu	Lys	Asn	Val	Pro	Ser
				395					400				405
Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg	Gly	Cys	Val	Gly
				410					415				420
Phe	Ile	Ala	Met	Val	Met	Met	Lys	Ala	Ile	Leu	Val	Thr	Leu
				425					430				435
Arg	Arg	Cys	Arg	Val	Gln	Thr	Met	Lys	Gly	Arg	Gly	Leu	Asn
				440					445				450
Ile	Gln	Lys	Asn	Asn	Asp	Leu	Ser	Met	His	Pro	Ile	Glu	Arg
				455					460				465
Pro													

<210> 17

<211> 486

<212> PRT

<213> Poephila guttata

<400> 17

Met	Phe	Leu	Glu	Met	Leu	Asn	Pro	Met	His	Tyr	Asn	Val	Thr	Ile
				005					010					015
Met	Val	Pro	Glu	Thr	Val	Pro	Val	Ser	Ala	Met	Pro	Leu	Leu	Leu
				020					025					030
Ile	Met	Gly	Leu	Leu	Leu	Leu	Ile	Arg	Asn	Cys	Glu	Ser	Ser	Ser
				035					040					045
Ser	Ile	Pro	Gly	Pro	Gly	Tyr	Cys	Leu	Gly	Ile	Gly	Pro	Leu	Ile
				050					055					060
Ser	His	Gly	Arg	Phe	Leu	Trp	Met	Gly	Ile	Gly	Ser	Ala	Cys	Asn
				065					070					075
Tyr	Tyr	Asn	Lys	Met	Tyr	Gly	Glu	Phe	Met	Arg	Val	Trp	Ile	Ser
				080					085					090
Gly	Glu	Glu	Thr	Leu	Ile	Ile	Ser	Lys	Ser	Ser	Ser	Met	Val	His
				095					100					105
Val	Met	Lys	His	Ser	Asn	Tyr	Ile	Ser	Arg	Phe	Gly	Ser	Lys	Arg
				110					115					120
Gly	Leu	Gln	Cys	Ile	Gly	Met	His	Glu	Asn	Gly	Ile	Ile	Phe	Asn
				125					130					135
Asn	Asn	Pro	Ser	Leu	Trp	Arg	Thr	Val	Arg	Pro	Phe	Phe	Met	Lys
				140					145					150
Ala	Leu	Thr	Gly	Pro	Gly	Leu	Ile	Arg	Met	Val	Glu	Val	Cys	Val
				155					160					165
Glu	Ser	Ile	Lys	Gln	His	Leu	Asp	Arg	Leu	Gly	Asp	Val	Thr	Asp
				170					175					180
Asn	Ser	Gly	Tyr	Val	Asp	Val	Val	Thr	Leu	Met	Arg	His	Ile	Met

				185					190					195
Leu	Asp	Thr	Ser	Asn	Thr	Leu	Phe	Leu	Gly	Ile	Pro	Leu	Asp	Glu
				200					205					210
Ser	Ser	Ile	Val	Lys	Lys	Ile	Gln	Gly	Tyr	Phe	Asn	Ala	Trp	Gln
				215					220					225
Ala	Leu	Leu	Ile	Lys	Pro	Asn	Ile	Phe	Phe	Lys	Ile	Ser	Trp	Leu
				230					235					240
Tyr	Arg	Lys	Tyr	Glu	Arg	Ser	Val	Lys	Asp	Leu	Lys	Asp	Glu	Ile
				245					250					255
Glu	Ile	Leu	Val	Glu	Lys	Lys	Arg	Gln	Lys	Val	Ser	Ser	Ala	Glu
				260					265					270
Lys	Leu	Glu	Asp	Cys	Met	Asp	Phe	Ala	Thr	Asp	Leu	Ile	Phe	Ala
				275					280					285
Glu	Arg	Arg	Gly	Asp	Leu	Thr	Lys	Glu	Asn	Val	Asn	Gln	Cys	Ile
				290					295					300
Leu	Glu	Met	Leu	Ile	Ala	Ala	Pro	Asp	Thr	Met	Ser	Val	Thr	Leu
				305					310					315
Tyr	Val	Met	Leu	Leu	Leu	Ile	Ala	Glu	Tyr	Pro	Glu	Val	Glu	Thr
				320					325					330
Ala	Ile	Leu	Lys	Glu	Ile	His	Thr	Val	Val	Gly	Asp	Arg	Asp	Ile
				335					340					345
Arg	Ile	Gly	Asp	Val	Gln	Asn	Leu	Lys	Val	Val	Glu	Asn	Phe	Ile
				350					355					360
Asn	Glu	Ser	Leu	Arg	Tyr	Gln	Pro	Val	Val	Asp	Leu	Val	Met	Arg
				365					370					375
Arg	Ala	Leu	Glu	Asp	Asp	Val	Ile	Asp	Gly	Tyr	Pro	Val	Lys	Lys
				380					385					390
Gly	Thr	Asn	Ile	Ile	Leu	Asn	Ile	Gly	Arg	Met	His	Arg	Leu	Glu
				395					400					405
Tyr	Phe	Pro	Lys	Pro	Asn	Glu	Phe	Thr	Leu	Glu	Asn	Phe	Glu	Lys
				410					415					420
Asn	Val	Pro	Tyr	Arg	Tyr	Phe	Gln	Pro	Phe	Gly	Phe	Gly	Pro	Arg
				425					430					435
Ser	Cys	Ala	Gly	Lys	Tyr	Ile	Ala	Met	Val	Met	Met	Lys	Val	Val
				440					445					450
Leu	Val	Thr	Leu	Leu	Lys	Arg	Phe	His	Val	Lys	Thr	Leu	Gln	Lys
				455					460					465
Arg	Cys	Ile	Glu	Asn	Met	Pro	Lys	Asn	Asn	Asp	Leu	Ser	Leu	His
				470					475					480
Leu	Asp	Glu	Asp	Ser	Pro									
				485										

<210> 18
 <211> 50
 <212> PRT
 <213> Homo sapiens

<400> 18

Arg	Asn	Val	Ile	Gln	Ile	Ser	Asn	Asp	Leu	Glu	Asn	Leu	Arg	Asp
				005					010					015
Leu	Leu	His	Val	Leu	Ala	Phe	Ser	Lys	Ser	Cys	His	Leu	Pro	Trp
				020					025					030
Ala	Ser	Gly	Leu	Glu	Thr	Leu	Asp	Ser	Leu	Gly	Gly	Val	Leu	Glu
				035					040					045
Ala	Ser	Gly	Tyr	Ser										
				050										

<210> 19
 <211> 50
 <212> PRT
 <213> Pan troglodytes

Arg	Asn	Met	Ile	Gln	Ile	Ser	Asn	Asp	Leu	Glu	Asn	Leu	Arg	Asp
				005					010					015
Leu	Leu	His	Val	Leu	Ala	Phe	Ser	Lys	Ser	Cys	His	Leu	Pro	Trp
				020					025					030
Ala	Ser	Gly	Leu	Glu	Thr	Leu	Asp	Ser	Leu	Gly	Gly	Val	Leu	Glu
				035					040					045
Ala	Ser	Gly	Tyr	Ser										
				050										

<210> 20
 <211> 50
 <212> PRT
 <213> Gorilla gorilla

Arg	Asn	Met	Ile	Gln	Ile	Ser	Asn	Asp	Leu	Glu	Asn	Leu	Arg	Asp
				005					010					015
Leu	Leu	His	Val	Leu	Ala	Phe	Ser	Lys	Ser	Cys	His	Leu	Pro	Trp
				020					025					030
Ala	Ser	Gly	Leu	Glu	Thr	Leu	Asp	Ser	Leu	Gly	Gly	Val	Leu	Glu
				035					040					045
Ala	Ser	Gly	Tyr	Ser										
				050										

<210> 21
 <211> 50
 <212> PRT
 <213> Orangutan

Arg	Asn	Val	Ile	Gln	Ile	Ser	Asn	Asp	Leu	Glu	Asn	Leu	Arg	Asp
				005					010					015
Leu	Leu	His	Val	Leu	Ala	Phe	Ser	Lys	Ser	Cys	His	Leu	Pro	Trp

	020		025		030
Ala Ser Gly Leu	Glu Thr Leu Asp Arg	Leu Gly Gly Val Leu	Glu		
	035		040		045
Ala Ser Gly Tyr	Ser				
	050				

<210> 22
 <211> 50
 <212> PRT
 <213> Rhesus monkey

<400> 22														
Arg Asn Val Ile	Gln Ile Ser Asn Asp	Leu Glu Asn Leu Arg	Asp											
	005		010	015										
Leu Leu His Leu	Leu Ala Phe Ser Lys	Ser Cys His Leu Pro	Leu											
	020		025	030										
Ala Ser Gly Leu	Glu Thr Leu Glu Ser	Leu Gly Asp Val Leu	Glu											
	035		040	045										
Ala Ser Leu Tyr	Ser													
	050													

<210> 23
 <211> 50
 <212> PRT
 <213> Rattus norvegicus

<400> 23														
Gln Asn Val Leu	Gln Ile Ala His Asp	Leu Glu Asn Leu Arg	Asp											
	005		010	015										
Leu Leu His Leu	Leu Ala Phe Ser Lys	Ser Cys Ser Leu Pro	Gln											
	020		025	030										
Thr Arg Gly Leu	Gln Lys Pro Glu Ser	Leu Asp Gly Val Leu	Glu											
	035		040	045										
Ala Ser Leu Tyr	Ser													
	050													

<210> 24
 <211> 50
 <212> PRT
 <213> Rattus norvegicus

<400> 24														
Gln Asn Val Leu	Gln Ile Ala His Asp	Leu Glu Asn Leu Arg	Asp											
	005		010	015										
Leu Leu His Leu	Leu Ala Phe Ser Lys	Ser Cys Ser Leu Pro	Gln											
	020		025	030										
Thr Arg Gly Leu	Gln Lys Pro Glu Ser	Leu Asp Gly Val Leu	Glu											
	035		040	045										

Ala Ser Leu Tyr Ser
050

<210> 25
<211> 50
<212> PRT
<213> Mus musculus

<400> 25
Gln Asn Val Leu Gln Ile Ala Asn Asp Leu Glu Asn Leu Arg Asp
005 010 015
Leu Leu His Leu Leu Ala Phe Ser Lys Ser Cys Ser Leu Pro Gln
020 025 030
Thr Ser Gly Leu Gln Lys Pro Glu Ser Leu Asp Gly Val Leu Glu
035 040 045
Ala Ser Leu Tyr Ser
050

<210> 26
<211> 50
<212> PRT
<213> Ancestral sequence

<400> 26
Arg Asn Val Ile Gln Ile Ser Asn Asp Leu Glu Asn Leu Arg Asp
005 010 015
Leu Leu His Leu Leu Ala Ser Ser Lys Ser Cys Pro Leu Pro Gln
020 025 030
Ala Arg Gly Leu Glu Thr Leu Glu Ser Leu Gly Gly Val Leu Glu
035 040 045
Ala Ser Leu Tyr Ser
050

<210> 27
<211> 50
<212> PRT
<213> Sus scrofa

<400> 27
Arg Asn Val Ile Gln Ile Ser Asn Asp Leu Glu Asn Leu Arg Asp
005 010 015
Leu Leu His Leu Leu Ala Ser Ser Lys Ser Cys Pro Leu Pro Gln
020 025 030
Ala Arg Ala Leu Glu Thr Leu Glu Ser Leu Gly Gly Val Leu Glu
035 040 045
Ala Ser Leu Tyr Ser
050

<210> 28
<211> 50
<212> PRT
<213> Ovis

<400> 28

Arg	Asn	Val	Ile	Gln	Ile	Ser	Asn	Asp	Leu	Glu	Asn	Leu	Arg	Asp
				005						010				015
Leu	Leu	His	Leu	Leu	Ala	Ala	Ser	Lys	Ser	Cys	Pro	Leu	Pro	Gln
				020						025				030
Val	Arg	Ala	Leu	Glu	Ser	Leu	Glu	Ser	Leu	Gly	Val	Val	Leu	Glu
				035						040				045
Ala	Ser	Leu	Tyr	Ser										
				050										

<210> 29
<211> 50
<212> PRT
<213> Bos taurus

<400> 29

Arg	Asn	Val	Val	Gln	Ile	Ser	Asn	Asp	Leu	Glu	Asn	Leu	Arg	Asp
				005						010				015
Leu	Leu	His	Leu	Leu	Ala	Ala	Ser	Lys	Ser	Cys	Pro	Leu	Pro	Gln
				020						025				030
Val	Arg	Ala	Leu	Glu	Ser	Leu	Glu	Ser	Leu	Gly	Val	Val	Leu	Glu
				035						040				045
Ala	Ser	Leu	Tyr	Ser										
				050										

<210> 30
<211> 50
<212> PRT
<213> Dog

<400> 30

Arg	Asn	Val	Val	Gln	Ile	Ser	Asn	Asp	Leu	Glu	Asn	Leu	Arg	Asp
				005						010				015
Leu	Leu	His	Leu	Leu	Ala	Ser	Ser	Lys	Ser	Cys	Pro	Leu	Pro	Arg
				020						025				030
Ala	Arg	Gly	Leu	Glu	Thr	Phe	Glu	Ser	Leu	Gly	Gly	Val	Leu	Glu
				035						040				045
Ala	Ser	Leu	Tyr	Ser										
				050										

<210> 31
<211> 28
<212> PRT

<213> Sus scrofa

<400> 31

Asn	His	Tyr	Thr	Cys	Arg	Phe	Gly	Ser	Lys	Leu	Gly	Leu	Glu	Cys
				005					010					015
Ile	Gly	Met	His	Glu	Lys	Gly	Ile	Met	Phe	Asn	Asn	Asn		
				020					025					

<210> 32

<211> 28

<212> PRT

<213> Sus scrofa

<400> 32

Ser	His	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	Pro	Gly	Leu	Gln	Phe
				005					010					015
Ile	Gly	Met	His	Glu	Lys	Gly	Ile	Ile	Phe	Asn	Asn	Asn		
				020					025					

<210> 33

<211> 28

<212> PRT

<213> Sus scrofa

<400> 33

Ser	His	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	Pro	Gly	Leu	Glu	Cys
				005					010					015
Ile	Gly	Met	Tyr	Glu	Lys	Gly	Ile	Ile	Phe	Asn	Asn	Asp		
				020					025					

<210> 34

<211> 28

<212> PRT

<213> White lipped peccary

<400> 34

Ser	His	Tyr	Thr	Ser	Arg	Phe	Gly	Ser	Lys	Pro	Gly	Leu	Gln	Phe
				005					010					015
Ile	Gly	Met	His	Glu	Lys	Gly	Ile	Ile	Phe	Asn	Asn	Asn		
				020					025					

<210> 35

<211> 83

<212> DNA

<213> Sus scrofa

<400> 35

CAATCATTAC ACGTGCCGAT TTGGCAGCAA ACTTGGGTTG GAATGCATTG GCATGCATGA 60
AAAAGGCATCA TGTTTAACAA TAA

<210> 36
<211> 84
<212> DNA
<213> Sus scrofa

<400> 36
TAGTCACTAC ACATCCCGAT TTGGCAGCAA ACCTGGGTTG CAGTTCATTG GCATGCATGA 60
GAAAGGCATT ATATTCAACA ATAA

<210> 37
<211> 84
<212> DNA
<213> Sus scrofa

<400> 37
CAGTCACTAC ACATCCCGAT TCGGCAGCAA ACCTGGGTTG GAGTGCATCG GCATGTATGA 60
GAAGGGCATC ATATTTAATA ATGA

<210> 37
<211> 84
<212> DNA
<213> White lipped peccary

<400> 37
CAGTCACTAC ACATCCCGAT TCGGCAGCAA ACCTGGGTTG CAGTTCATTG GAATGCATGA 60
GAAAGGCATC ATATTTAACA ACAA